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East Europe Report

ECONOMIC AND INDUSTRIAL AFFAIRS

No. 2217

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NEED FOR COOPERATION AMONG INDUSTRIAL AGRICULTURAL UNITS

Tirana ZERI I POPULLIT in Albanian 11 Nov 81 p 3

[Article by Petro Dode, chairman of the State Planning Commission: "The Expansion and Strengthening of Cooperative Ties--An Important Area for the Perfecting of the Organization and Management of the Economy"]

[Excerpts] Cooperation is not simply material-technical supply but an entire system of organic links between a number of production units, links which must be monitored with responsibility, step by step. But, although this activity is well represented in the plans which are drawn up and executed at the level of the national economy for large projects and activities, there are shortcomings in enterprises and cooperatives. The ministries and the executive committees of the districts must better execute their functions in this field in order to eliminate these shortcomings.

Cooperation is a serious problem for the machine industry, in particular. The production of machines and equipment will increase 58 percent during the period from 1981 to 1985, compared to the Sixth Five-Year Plan. For the expansion and reconstruction of existing projects and the construction of new projects, more than 25,000 tons of machinery and equipment of various types will be produced through multilateral cooperation among plants and machine bases in the entire country. During the five-year plan, about 500 types of key machinery and equipment, some 265,000 pieces, will be produced in order to raise the level of the technical equipping of work and production in various branches of the economy. These tasks are difficult since a good part of the machinery and equipment which will be produced is complex in regard to construction and production techniques and many pieces are one of a kind or are produced in small series.

The great dimensions which the production of machines and equipment has assumed emphasize the need for a further revolutionizing of the management and organization of the machine industry. The plants of the machine bases should comply better with the discipline of the plan and with strict technical and technological discipline in production. This can and must be achieved in the struggle with the artisan spirit and with the artisan-type organization of production in some plants and machine shops and in regard to manifestations of narrow interests on the part of enterprises and ministries.

In addition to strengthening ties of cooperation among the machine bases and the factories, there is still a need to ensure the complete coordination of tasks between the technological bureaus of the enterprises and the working groups charged with executing studies in cooperation with the Institute for Technical and Technological Designs and the better coordination of work between the investors and the design institutes in the Ministry of Construction.

In order to organize and expand planned cooperation in the machine industry it is necessary that the experiences gained in the construction of the industrial projects left half-finished by the Chinese revisionists be better utilized. These projects include the copper smelting plant in Lac, the ferrochrome plant, some projects in the "Steel of the Party" metallurgical combine. Also, the experience gained in the construction of other projects which are being built completely with our own forces should be better utilized.

Cooperation plays an important role in achieving the objectives in the extractive industry and in the ferrous and nonferrous metallurgical industries. The development of the extractive and processing industries during the Seventh Five-Year Plan will continue to be one of the main activities of the socialist industrialization of the country. In order to achieve the established objectives, a complex of problems and tasks have been set forth in the areas of prospecting, extraction and processing and greater cooperation is required. Special importance is assigned to the increasing of reserves in the existing mines and the preparation of these reserves for exploitation, issues which are directly related to increasing the effectiveness of investments. The cooperative ties in the areas of prospecting for, extracting and processing ores should be represented better and better in the plan and should be better affirmed by means of contracts between the enterprises and the scientific institutions in order to eliminate the spontaneous character which occurs in some instances.

In the framework of the entire activity for the further improvement of the coordination of duties among branches, a special role is played by agriculture which, in the process of intensification, is continually expanding and strengthening its cooperation with other branches of the economy and with many scientific research bodies.

In accordance with the directives of the 8th Party Congress for the Seventh Five-Year Plan, in 1985, industry will give agriculture chemical fertilizers, insecticides, pesticides, machinery and equipment and raw materials with a general value 55 percent higher than in 1980. In return, in 1985, agriculture will give industry about 50 percent more raw materials than in 1980, in order to base development on more rapid rates of production of consumer goods.

Therefore, the state and economic organs should work harder for the coordination, analysis and execution of the tasks of the five-year plan for the further strengthening of the technical-material bases of agriculture. Also, measures should be taken to increase the effectiveness of the technical-material base in ensuring the objectives specified for increasing agricultural and livestock products.

For the expansion and strengthening of cooperative ties in the economy, one must fight more strongly against subjectivism and liberalism which often appear, creating difficulties, breaking the chain of cooperative ties and, in some cases, preventing the fulfillment of the tasks of the plan.

While emphasizing these key areas, stress will be put on the planned implementation of cooperative ties, by all state and economic organs and there will be a continuing effort to ensure that these ties are better implemented in other sectors of the economy, such as light industry and the food industry, by coordinating tasks related to increasing the purchasing power of the people and providing sufficient consumer goods, as well as in financial and hard currency indicators and in transportation, by the coordination of the research work of the various scientific institutions and branches.

CS0: 2100/30

MANAGEMENT PERFORMANCE UNDER SET OF MEASURES CRITICIZED

Bratislava PRAVDA in Slovak 10 Nov 81 pp 1, 2

[Editorial: "Management"]

[Text] Among the issues most frequently discussed and most criticized at the recent Fourth Plenum of the CPCZ Central Committee was the problem of management. Let us recall several ideas on which attention focused.

In his concluding speech, Comrade Husak stated that the fundamental conclusion which was to be drawn from the Fourth Plenum was the requirement of a basic change in the standard and effectiveness of management along all channels and at all levels. On principle, it is necessary to apply demanding political, professional and moral criteria to workers and to judge them according to the practical results achieved in the area under their supervision. When they are not able to cope with their tasks, the appropriate conclusions must be drawn.

In his speech, Comrade Strougal stated that the weaknesses in the plan fulfillment and existing shortcomings are to be blamed on management of central agencies, VHJ [economic production units] and enterprises. A significant discrepancy has appeared between the proclaimed support of congress resolutions by many managers and the actual effort and results achieved by them. "We are of the opinion," he emphasized, "that this situation must be thoroughly analyzed at all levels and the necessary conclusions--including personnel changes--must be drawn."

In another context, Comrade Strougal said that the draft plans for 1982 submitted by almost 50 percent of VHJ not only ignored specific problems of the national economy and the guidelines for the preparation of the annual plan, but stubbornly insisted on the original requirements in all areas although they had not produced the required results...There is only one way out of this situation: either the attitude of ministries, VHJ and enterprises toward the implementation of economic policy will change or the respective managers will have to be replaced.

Let us restate the essential issues: to achieve a radical change in the standard and effectiveness of management along all channels and at all levels...to eliminate the significant discrepancy between the proclaimed support of congress resolutions and actual effort and results achieved by many managers. In other words, to achieve the unity of words and deeds.

It has been said and written hundreds of times that these demands represent the categorical imperative of the present times to which there is no other alternative. The same is true of the qualities with which the socialist manager should be endowed, of the style of his work, of the duties and tasks which he is to or should fulfill in the struggle for intensification, economy, efficiency and quality.

It sounds like a wornout phonograph record to say in our country today that we must demand of managers discipline, a principled approach, a sense for the new, creative initiative, resolution in eliminating red tape, stereotype and tolerance to shortcomings. Many people turn a deaf ear to the demand that such a style of work requires ability to think eclectically, to interpret broad political and social connections in the long term and to sensitively react to short-term problems and opportunities for innovation. At the same time, they must develop the ability to free themselves from intellectual and organizational stereotypes and to cultivate originality, healthy entrepreneurship, willingness to assume risks connected with the introduction of innovations and the art of combining creative imagination with the sense of reality. They must trust people and enhance their abilities, stimulate their activity, make room for their creative potential and systematically support it.

The application of "analysis in depth" appears to be a fashionable cliché rather than a practical method, although it represents the basic method of management. It must be used comprehensively in order to discover the causes of the present situation, of existing problems and shortcomings. It should be used to solve specific problems. There is more fiction than reality in the requirement that the manager must know how to calculate in order to produce most efficiently with maximum economy--from the standpoint of the entire society. At the same time, he must sensitively deal with social problems--people. He must learn to know and use--and not abuse and deform--the "soul" of the blue-collar workers for plan fulfillment and against waste and malpractices of all kind.

The manager must know the laws [governing economic development], developmental tendencies, see the prospects, know how to achieve the goals. He must analyze management methods and economic results and strategically plan his own activities as well as activities of the workplace under his supervision. He must know, want and be able.

These attributes of managers' activities are, so to say, "eternal" truths. If they are just endlessly affirmed without a persistent, systematic effort to find rational ways and methods of implementing them in practice, they remain in the area of wishful thinking and recommendations. We thus have a situation in which some managers see their mission in service to the society and successfully cope with their tasks, while other managers endlessly insist on explanation of policy and party line, and act in the old way. Instead of solving problems and eliminating shortcomings, they merely try to explain them away. They are governed by the "theory" of self-satisfied, inactive people according to which the situation is allegedly "unresolvable" and do not admit that the low standard of their management is caused by subjective and egoistic reasons, and that it also stems, among other things, from the effort not to make any changes in well-established, traditional production and work organization. Still less do they

understand that internal cooperation and division of labor must be brought into harmony with production conditions and requirements so that the worker ceases to be merely an object, but becomes the subject of action, of struggles for the implementation of party economic policy.

These are economic managers who, though they live under socialism, enjoy its achievements and advantages, and work in socialist workplaces, do not manage and organize them in the socialist manner. This is the only possible logical explanation of the present situation.

Where are the causes and reasons for it to be found?

At the statewide meeting of activists in March 1980 which dealt with the improvement of the system of planned management, Comrade Strougal emphasized that the principal reasons for overall efficiency of our economy must be seen primarily in the subjective factor--in management in general. This means not only in the system, but also in management by managers, their staffs, low standard of analytical and decisionmaking activity, in their not always adequate qualification and competence, and in some instances also in their irresponsibility.

If the general conditions of economic and financial management permit such behavior, then the managers--people--adapt themselves to these conditions. It is namely always so that most people act normally, that is in accordance with the given conditions. If we want to change their behavior, thinking, attitudes and activity, we must first change the conditions and rules which will profoundly affect and determine their behavior.

This is the purpose of the Set of Measures.

Naturally, the Set of Measures is neither a panacea nor does it or will it ever work automatically. Each of its principles must be translated into reality by people, and by the management sphere, economic managers in the first place. These principles must be implemented in such a way that none of them may be circumvented, made softer or undermined in its effectiveness. They will fulfill their mission only if they are equally binding for all, if we do not try to mitigate and weaken their effect by exemptions and additional exemptions from exemptions.

What will the manager do under those circumstances?

He will have significantly less room for formalism, alibiism, inactivity, subjectivism, willfulness, anarchistic tendencies, opportunism in practice, concessions to and speculations about party policy, actions against working-class policy. Are these hard words? Hard reality requires telling people the hard truth directly to their face. But that is still not enough. It is necessary to remedy the situation with persistent effort.

If the manager does not achieve the required results, there are only two possibilities: he demonstrates either his unwillingness or his inability to increase the standard and effectiveness of his managerial work, to think and act in the new way.

To lament over problems, to kill time by pointing out the impossibility of their solution, is an unconstructive approach and attitude. It amounts to writing an evaluation of one's own apolitical attitude, of one's immature thinking in general and economic thinking in particular.

And inability?

Sentimentality, liberalism and different criteria must not be part of principled personnel policy. Acute problems in this respect must be solved with tact toward individuals, but above all with a feeling of responsibility toward the interests and needs of the society. It was not by chance that we quoted Comrade Strougal's words at the beginning of this article and that we repeat them: "Either the attitude of ministries, VHL and enterprises toward the implementation of economic policy will change or the respective managers will have to be replaced."

This is the solution--there is no third possibility. This applies also to those who, while emphasizing their past achievements and merits, are not able or do not want to contribute to the creative fulfillment of present tasks. In his speech to the Fourth Plenum of the CPCZ Central Committee, Comrade Husak reminded us all of V. I. Lenin's words: "To screen people and to check on the actual fulfillment of tasks--that is the core of our entire work and of our entire policy."

The logic of development is merciless. Our effort aimed at intensification, greater economy, higher efficiency and quality cannot be completely successful without rendering management more scientific and more effective. It must become more efficient, more purposeful, more rational and more competent. It is ineffective, if instead of pertinent analyses and evidence, instead of analyses of actual problems and existing possibilities, instead of open discussion of specific shortcomings and ways of eliminating them, matters are often "settled" only in a formal way--by "detailing" tasks, by "administrative" paper work. These are the methods which cannot be tolerated in management.

The party organs and organizations occupy an irreplaceable place in this struggle for a radical change in the standards and efficiency of management. At the Fourth Plenum of the CPCZ Central Committee, Comrade Husak rightfully pointed out that we must stress the leading role of the party and the control function of the party more consistently, in full scope and in correct form at all levels of management. This does not mean, however, that individual officials and workers and leading positions should be called to account from time to time only. Regardless of the sector in which they work, they must through systematic, everyday work with the communists defend the party policy, enforce the leading role of the party, implement its control function. This applies also--or above all--to the political attitude toward management.

The intensification of social production is the only possible way in which is appropriate to the building of developed socialism, to the internal logic of the socialist revolution. Its inevitability stems from the complex of objective processes which are reflected in the changed conditions of reproduction and of the present situation in the international class struggle. Due to these facts, the managerial sphere and especially economic managers face an indisputable task: the gravitation toward extensivity must be overcome by using science,

efficiency, quality, and by implementation of the program of specialization and cooperation with the Soviet Union and other countries of the socialist community.

It is up to all managerial workers to translate into the reality these words of the resolution passed by the Fourth Plenum of the CPCZ Central Committee:

"Managerial workers at all levels must demonstrate high responsibility, an active attitude and one with initiative toward plan fulfillment and uncompromisingly fight for the consistent implementation of party policy."

10501

CSO: 2400/75

PRIVATE OWNERSHIP IN CSSR AGRICULTURE NOT ENCOURAGED

Prague ZEMEDELSKE NOVINY in Czech 14 Nov 81 p 7

[Article by Frantisek Savov: "Meat From Contract Feedlots"]

[Text] Large-scale socialist agriculture plays a critical role in producing food for the people of our country. Cooperatives, state farms, large-scale feedlots, and other socialist organizations, including service enterprises, account for more than 90 percent of all of the milk and meat that is produced in this country. However, the lessons learned in past years have also demonstrated that the owners of private plots who belong to cooperatives, as well as small-scale livestock breeders and growers, can also play a helpful role in putting all farmland to work for the purpose of producing foodstuffs.

This is why, during the final year of the Sixth Five-Year Plan, the practice was introduced of sending farm animals, primarily cattle, sheep, and goats, to feedlots on a contractual basis. Last month the tax on incomes earned from this kind of activity was also abolished. This issue was also addressed at the fourth session of the CPCZ Central Committee by Central Committee secretary Frantisek Pitra who pointed out, among other things, that since the beginning of this year contract feedlots had produced 12,370 tons of animals for slaughter. At the same time, however, he stressed that opportunities for reaping benefits from non-mechanized farmlands that do not belong to agricultural enterprises have not yet been totally exhausted.

The truth of these words spoken at the fourth session of the CPCZ Central Committee is also borne out by the lessons that have been learned in the East Bohemia Kraj. In 1979, when the contract feedlot program was starting to become more widespread, there were 11 okreses in the East Bohemia kraj in which 3,169 contracts were entered into for the feeding of beef cattle and 125 contracts for the feeding of sheep. By 1980, there were 3,953 feedlot contracts for beef cattle and 3,953 feedlot contracts for sheep. There is not nearly as much interest in feedlot contracts for slaughter hogs. In 1980, small-scale contract feedlot breeders sold only 20 hogs to the meat-processing industry.

As was pointed out by Bretislav Macoun, deputy director of the BREZHRAD East Bohemia Meat-Processing Industry, during the last five-year plan the number of domestic hogs sold for slaughter dropped from 45,000 per year to a mere 18,000. In pace with the changing living standards of the rural population, there has

been a corresponding slackening of interest in the raising of animals on private plots. The abolition of the income tax was supposed to have been gradually reflected in the increased interest of people living in rural areas in entering into contracts for the feeding of farm animals. The many lessons that have been learned from the way the contract feedlot program is now organized also speak in favor of the expansion of this program.

The procurement agents of the meat-processing industry cannot get by without the cooperation of the national committees. According to what we were told by Lea Tomekova, sales manager in charge of the feedlot program for the management of the BREZHRAD East Bohemia Meat-Processing Industry, the enterprise wound up with a lot of nonagricultural acreage in certain okreses in the course of fulfilling its feedlot contract program targets for this year. The goal is to fulfill a target set by the CPCZ kraj committee and conclude 4,000 contracts this year for the feeding of beef cattle. By the third quarter of this year 2,767 contracts had been signed. That is not very much! Thanks to the efforts of purchasing agents the goal that was set has been fulfilled. However, their efforts in this direction are often at cross purposes with the contracts that are entered into by cooperatives and state farms with their members and employees.

"At the beginning of the year we assumed that most of these contracts would be concluded in foothill and mountain areas where most of the arable land does not belong to agricultural enterprises. In the meantime, things have turned out quite differently. For example, 365 contracts were signed in the Hradec Kralove okres, where there are only 350 hectares of nonagricultural farmland. On the other hand, in Rychnov nad Kneznou Okres, where there are 1,021 hectares of nonagricultural farmland, only 182 contracts were signed," said Lea Tomekova. At the same time, we are aware of the fact that in mountain communities and villages there are certain meadows, small plots, and forested areas that go uncultivated year in and year out. An effort should also be made to accommodate the requests made by the national committees so that each community could be provided with one manually operated power-driven mower for cutting grass. This would also benefit pensioners who are interested in the contract feedlot program, but are no longer strong enough to be able to cut a sufficient volume of fodder by themselves. There are still some national committees which are not allocating any land to persons who are interested in the contract feedlot program, land that is not otherwise being worked by anyone. This also holds true for the gardens of weekend cottage owners and recreationists, plots of land which in some cases are quite large.

There is still a great deal of debate surrounding the contract feedlot program. It needs to be said that under no circumstances is there any question of diminishing the role of socialist agriculture in the production of foodstuffs, just as there is no question of expanding or promoting the role of private farming. The development track for our country's agricultural sector was already mapped out at the Ninth CPCZ Congress in quite clear and succinct terms, and we were all persuaded that this is the correct course to follow. The contract feedlot program is dedicated first and foremost to making sure that all farmland is effectively exploited, that every acre of land is put to some good use. People who produce fodder for cattle and sheep are deserving of our gratitude for the work that they do, and they should not be objects of envy for the profits which they

reap from this activity. Finally, everyone could try once a day to cut some fresh grass for fodder, and at the same time they should try to set aside the necessary volume of hay for drying. The efforts of small-scale breeders and private plot owners are helping to improve the flow of quality meat supplies to the market, meat which is in fact being produced from the bulk fodders that would otherwise be going to waste.

In addition to the meat-processing industry, the national committees should also be held accountable for the performance record of the contract feedlot program. It is in fact the members of the national committees and their agents who know best the extent to which it is possible in each community to harvest hay from nonagricultural plots and plots which do not belong to agricultural enterprises, and, by the same token, they are also aware of the opportunities that exist for the signing of feedlot contracts. This general discussion of this issue should also discourage private plot owners and small-scale livestock breeders from keeping any more animals in their barns than they are able to feed.

11813

CSO: 2400/69

LACK OF SCIENTIFIC ELECTRONIC LITERATURE DECRIED

AU271540 [Editorial Report] Prague RUDE PRAVO in Czech on 23 November on page 5 carries a 1,100-word "VC"-signed article entitled "Education Must Not Lag Behind." The article reviews readers' reaction to an article by Eng Antonin Martinec of the Federal Ministry for Technological and Investment Development, published by RUDE PRAVO on 12 October, in which the author stresses the importance of education for the development of electronics and microelectronics.

Quoting a letter from Frantisek Dvorak from Prague, the article states: "I believe that one of the reasons we are not achieving results in electronics that would be commensurate with the needs of the national economy is the lack of information about the state of electronics in the world, about its new trends and so forth. Only a few periodicals publish articles on electronics and only few books and manuals are being published. Some areas, precisely the most important ones, are not covered at all. For example, there is no periodical in our country that would focus exclusively on numerical technology, microcomputers and related fields. To the best of my knowledge, not a single book has been published so far dealing with microprocessor technology. It is not that we would not have enough competent authors but it takes the publishing houses for technical literature so long to produce the books that by the time they are published even the new publications are out of date in many respects.

"A very bad situation exists as regards books with a practical orientation (application manuals, catalogues). It frequently happens that we purchase some parts (this concerns especially some integrated circuits), for which it is often impossible to get hold of even the most basic catalogue data, to say nothing of patterns for connecting and applying them."

Because of the lack of technical literature, Dvorak goes on to say, "in enterprises in which the use of microprocessors or monochip microcomputers is envisaged for the future, little is known about the concrete method of applying those elements, or, too, the notions are considerably distorted and superficial, based on an incorrect perception of the function and potential of monochip microcomputers."

One problem that "must be solved immediately because otherwise we will lament in vain young people's lack of interest in technical matters" is, according to Dvorak, the "virtual nonexistence of suitable literature for beginners and moderately advanced students regarding the new branches of electronics."

Dvorak goes on to say: "Another reason for the fact that our electronics is trailing behind therest, in my view, in the component basis. It is again the youth that is affected most. Especially integrated circuits of a higher degree of integration are, despite the reduction of prices for semiconductors, too expensive for them. The variety of semiconductors and other components is, moreover, insufficient when compared with the offer abroad and the most advanced components cannot even be bought in our country. On the other hand, stores for radio-amateurs in the GDR or in Hungary offer all kinds of both domestically produced and imported modern microprocessor circuits." As a result, "those interested in electronics cannot acquire the necessary practice," Dvorak adds and warns that "if the conditions do not radically change as soon as possible, we must anticipate that for the period to come we will not be able to train a sufficient number of experts."

Similar views are expressed by Miroslav Ptacek from Kladno, who also regards the price of components as an obstacle to a speedier development of micro-electronics. He is quoted as having written: "The unfavorable ratio between the price of our and foreign microelectronic elements thwarts their application in planning new mass-produced products. Only with great difficulty can employees of the development sector get hold of imported components, which they could learn to handle and, possibly, even program. The logical consequence is that the producers are not interested in applying microelectronics to electronic consumer goods."

CSO: 2400/84

CZECHOSLOVAKIA

BRIEFS

IRRIGATION EQUIPMENT FOR VIETNAM--Concern enterprise SIGMA OLOMOUC trains Vietnamese irrigation equipment specialists at its service center in Danang, SRV. In 1981, SIGMA OLOMOUC expects to deliver 300 irrigation units to the SRV. [Bratislava SMENA in Slovak 12 Dec 81 p 5]

CSO: 2400/97

SITUATION, IMPROVED PROSPECTS OF PRIVATE SECTOR SURVEYED

Budapest NEPSZABADSAG in Hungarian 2 Dec 81 p 10

[Article by Jozsef Molnar, chairman of the National Organization of Artisans: "Artisans Today and Tomorrow"]

[Text] On 5 and 6 December, the National Organization of Artisans (Kisiparosok Országos Szervezete) will hold its eighth national meeting of delegates. On this occasion it will be worthwhile to review the path that artisans have traveled, and to present their place and role in the economy. This is the more important because our sphere of activity, owing to its peculiarities, is still a subject of debate and a focus of conflicting views.

Fairly recently, about five or six years ago, the number of artisans providing services and producing goods dropped to 84,000. Society's judgment was adversely influenced by the generalization of isolated abuses. Legal and economic regulation reflected this judgment. In the area of services it was evident already then that the population's supply--particularly in small settlements--could not be solved effectively without artisans. The discriminatory measures and income regulation that did not provide adequate incentives failed to attract youths, and the average age of artisans rose. All this contributed toward the widespread unlicensed practice of trades. Today, unlicensed artisans, together with the population's do-it-yourself efforts, supply about one-third of the total demand.

Society's Judgment

The 11th MSZMP Congress triggered a favorable process in services provided by artisans, and in society's judgment of artisans. Subsequently, under the influence of more up-to-date legal and economic regulations, the number of artisans began to increase, and interest in practicing trades became more keen. The artisans' activity shifted toward services. Development of the number of artisans is summed up in the following table.

Date	A	B	C	D
31 Dec 1975	56,822	20,111	7,655	84,588
30 Jun 1981	65,604	29,931	11,870	107,404

where A - Full-time artisans,
 B - Licensed part-time artisans,
 C - Retirees licensed as artisans, and
 D - Jointly,

At present there are about 19,000 employees working for artisans, and the number of family members who help out can be estimated at 20,000. Over 4,000 youths are apprenticed to artisans.

Parallel with the sharp rise, there is also considerable fluctuation. Each year more than 11,000 artisans turn in their licenses. One reason for this is that many artisans take out their licenses to pursue illusions of high incomes. But very soon they come to the sobering realization that also here above-average incomes can be achieved only through outstanding performances and honest effort. Anyone who attempts to attain high income dishonestly soon comes to grief, and also our organization strives to rid itself of such artisans.

In the second half of the Fifth Five-Year Plan, commodity production also opened up as another necessary area for the activity of artisans. The 12th MSZMP Congress unambiguously stated that artisans were an integral part of the economy, and that their activity could enhance the population's supply and the greater effectiveness of the enterprises and cooperatives. Based on reality, our economic policy provides a reliable indication that the increased inclusion of artisans in the realization of national economic tasks is not a short-term tactic.

The gross output of artisans exceeded 21 billion forints in 1980, having grown 87 percent in five years.

Economic Role

Consumer services provided by artisans have grown vigorously. Nationally their share reached 44 percent in 1980, and within this the artisans' share of services for the population reached 50 percent. Artisans operate 85 percent of the service centers and shops. Two-thirds of them live and work in small settlements where they are the sole suppliers of the demand.

Among the preferential services, 36 percent of the artisans are engaged in building-industry repairs and maintenance. Artisans perform 84 percent of the legal building repair and maintenance ordered by the population.

The value of motor vehicle repairs performed by artisans has doubled in five years, and the value of repairs on electroacoustical equipment and household appliances jointly has increased 60 percent during the same period. The value of dry-cleaning and laundering services shows a more modest growth, about 10 percent.

The traditional services retain their predominantly handicraft character. Twenty-four percent of the artisans are employed in this area. They provide 72 percent of all traditional services for the population, and their output has increased 150 percent in five years. In the branches of clothing, woodworking, plastics and sundry iron, metal and machinery repairs, the value added by artisans is greater than the value added jointly by the state enterprises and industrial cooperatives in these repair branches.

The proportion of artisans providing personal services is 5.7 percent. Their output increased 52 percent in five years. Their significance can be measured and evaluated primarily in that mostly they provide personal services in rural settlements.

The work of carters is significant particularly in villages. The value of their services increased 130 percent in the past five years.

The construction industry occupies a prominent place in the output of artisans. The value of its production increased 92 percent in five years, reaching 7.1 billion forints in 1980. Artisans are general contractors or subcontractors for 60 percent of the family homes built. They played an important role in the liquidation of the gypsy camps, and in rebuilding the homes destroyed by floods.

The output of industrial goods increased only 54 percent in five years, reaching 2.0 billion forints in 1980. In the interest of developing a more effective industrial structure and product structure, it is essential to develop the artisans' commodity production and coproduction that take into account also the needs of large-scale and intermediate industry.

An important factor of our economic progress is the output of products that incorporate a large proportion of intellectual effort, are suitable for export also to capitalist countries and can substitute import. More and more artisans are offering products produced on the basis of their own invention, design or composition. However, the activity and growth of such artisans are still hampered by many factors.

The output of folkcrafts also helps to foster peasant traditions. Regrettably, some of these crafts are dying out.

The considerable dispersion by trades and also by regions makes it difficult to gain an overview of commodity production for the population. Its gross value can be estimated at 200 million forints. Such production is characterized by flexible adaptation to the market demand, substitution of shortage items, close monitoring of the latest fashion trends, and wider selection for the population.

About 85 to 90 percent of the total industrial commodity production is of a collective nature. It is the task of the Enterprise for Promoting Production by Artisans (Kisipari Termelteto Vallalat) to coordinate commodity production in a planned manner. The enterprise places orders with about 2,500 artisans each year. Its gross turnover in 1980 was 616 million forints. Parts and subassemblies are the dominant within these orders.

Many modern and well-equipped artisan shops ceased during the past decade, under the influence of the contradictions and disincentives in economic regulation. On the other hand, hardly any new shops were opened. Therefore the enterprise has been unable to fully utilize the possibilities inherent in expanding the practice of farming out production to artisans.

Machinery, Equipment, Parts

About 37 percent of the artisan shops can be termed obsolete. The sources for financing development are the artisans' own resources, and also OTP (National Savings Bank) and savings association credits. The limited supply of machinery and tools of suitable quality hampers efforts to raise the technical level. One of our important tasks is to improve the conditions of the artisan shops, to enable them to approximate the modern requirements in mechanization, and thereby to raise the quality, technical level and utility value of their goods and services.

During the past four years, 33 artisans' service centers, and three shop-building and shop-maintenance cooperative units were built, mostly with own resources. Under the Sixth Five-Year Plan, the expansion of artisans' service centers is being aided also with subsidies from the central fund for the development of services, and nearly 250 million forints has been allotted for this purpose.

Suitable supply of materials and parts is one of the prerequisites for work to create and preserve value. Despite our efforts, we cannot speak of any significant improvement in this field. Artisans spend 15 to 30 percent of their time procuring materials and parts. It has been a problem for decades that artisans generally are unable to buy wholesale. The ever-smaller allocations of foreign exchange are able to supply merely a proportion of the materials that can be obtained only through import.

There are commendable initiatives for cooperation between large-scale industry and artisans. Videoton, for example, trains color-TV repairmen in its own schools and organizes their supply with parts. The cooperatives in Bacs-Kiskun Megye and elsewhere have created new conditions for cooperation with artisans in the building trades, by accepting orders for the artisans' spare capacity at the cooperatives' contracting offices.

At the same time it is noticeable that the managers of some enterprises and co-operatives, and even very many of the artisans themselves, have not recognized the possibilities of mutually advantageous cooperation. We deem it important that the managers of industrial enterprises rely on artisans and small shops to produce parts that the enterprises themselves cannot make economically. Through sensible division of labor, it would be possible to raise the efficiency of industry as a whole, and to improve the level of supply and services for the population. Thus the promotion of cooperation is not an aim in itself, rather an important means of realizing our economic policy.

Our Tasks

Under the Sixth Five-Year Plan the supply of services by artisans must be increased by 65 to 80 percent; and construction and industrial commodity production by artisans, by 25 to 30 percent, in accordance with the needs of society. This includes, among services, the preferential development of home maintenance and renovation, and of motor vehicle repairs. In commodity production it is of outstanding importance to develop the construction of family homes and cooperative apartments; the production of goods suitable for export, import substitution, resolution of shortages and the expansion of the assortment; and folkcrafts of artistic value that preserve our traditions.

It is our duty, and in our interest as well, to have also artisans employ material-saving and energy-conserving technologies, process more recycled materials and scrap, and expand the output of goods and services related to environmental protection. Wider opportunity must be ensured for the realization and marketing of inventions, designs and compositions by artisans.

The recently promulgated legal and economic regulations will help achieve all these objectives. They provide incentives for the expansion of the number of artisans, the modernization of their shops, the application of new technologies

and materials, and the dissemination of more productive work methods and forms of cooperation.

Our organization regards as its duty to promote, in addition to the traditional forms of services, also the introduction of novel forms of cooperation, and the formation of all-round artisan brigades and economic partnerships. We must support the efforts of those artisans who wish to make their shops suitable for small-scale production. It is likewise our task to improve the supply of artisans with materials, parts and tools, by utilizing the regional opportunities.

While we will strive to promote in every possible way the effectiveness of the legal and economic regulations pertaining to artisans, we will also have to detect in due time the stresses caused by the regulations. We must strive to learn and perfect the action mechanism of the regulators also by continuously comparing the economic objectives with the facts and by analyzing the economic drawbacks of the missed opportunities. To this end we will monitor the functioning of the new economic forms. Our practice of economic management would benefit if the effects of the new elements of regulation that are deemed desirable could also be verified experimentally, on a limited number of artisans participating voluntarily.

The outlined tasks confronting artisans also indicate that practical realization of our economic policy is our common cause and common responsibility. Today's artisan is fully aware of this and will not lose sight of it in his work tomorrow.

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HUNGARY

NEW BUSINESS FORMATS MAY CAUSE CONFLICT, CONFUSION

Budapest FIGYELŐ in Hungarian 16 Dec 81 p 15

[Text] The more than two dozen laws passed last month reveal that we can count on a greater variety of business relations within the operational framework of the organs of management in 1982. We can and must agree with the motives and principles which attempt to renew and enrich small-scale production and auxiliary activities through establishment of new organizational forms.

These new forms give rise to new issues relating to the work and business organization of agricultural cooperatives. One of the goals of the regulations pertaining to small business is to draw private financial resources into the mainstream of the economy to a greater extent. For this reason, the laws recognize that those who take material risks in economic enterprises are entitled to greater shares in return for the money invested than the interest paid by the OTP [National Savings Bank].

Increased involvement of private savings in the economy is justified not only in the case of small cooperatives but for cooperatives in general. This is because identical economic forms are concerned in both cases insofar as ownership rights are concerned.

This again brings up the need to refine and elaborate property relations between members and cooperatives. The present framework allows limited latitude for individual interest, ownership ties. At agricultural cooperatives, members are currently permitted only shares equivalent to OTP interest for their contributions to development and production.

Work involving industrial activity has been and is playing ever-growing role in the results of agricultural cooperatives over the past 10 years. It is no exaggeration to say that profitable industrial activity of appropriate extent is a prerequisite to pursuit of basic activities at some of the cooperatives. The question is how the change that has taken place in business organizations--small cooperative, small company, specialized coop group, business work partnership--will affect this industrial activity.

It is obvious that the regulations for small cooperatives and small companies may have a detrimental effect on the industrial and service activity to the agricultural cooperatives. We could say that it will put an end to monopoly they

have enjoyed to date: In the future, a whole series of economic activities which will improve the profitability of the products of the large enterprises can be carried out by small companies or small cooperatives /not attached to agricultural cooperatives/. The large enterprises' freedom of choice as to which organization to use in rationalizing their product structure will broaden. They can use either the auxiliary operations of the agricultural cooperatives or the small companies or cooperatives established for this purpose. Furthermore, the large enterprises can set up enterprise work partnerships or possibly sections with lump sum accounting which bind those involved more closely to the enterprise. All these setups will restrict the opportunities of the agricultural cooperatives for carrying out industrial and service type auxiliary activity.

Beyond the foregoing, many may fear that those who direct the industrial auxiliary activities of agricultural cooperatives and those engaged in the work may leave the cooperatives and continue their work in the form of small cooperatives or even work partnerships. However, this is merely an illusory threat: the decree governing work partnerships recognizes the small business and cooperative work partnership. In this case such operations may have a maximum of 30 employees all of whom must be either active or retired agricultural cooperative members. It then becomes possible for the workers to conduct traditional "auxiliary activities" which in addition to being to their financial benefit will keep them within the framework of the agricultural cooperative.

Great possibilities are inherent in the so-called lump sum accounting system which permits industrial service sections with a maximum of 15 members to work in the name of the cooperative in such a manner that the cooperative will derive profit from their activities also.

The drafters of the law, basing their ideas on the experiences of the agricultural specialized groups made it possible for future cooperatives and agricultural cooperatives to establish groups specializing in industrial services. Actually, beginning in January 1982, and kind of business activity can be performed by specialized groups within the agricultural cooperatives. In this way, the agricultural cooperatives can respond to the challenge of the opportunities of the small business and auxiliary organizations. Publication of the current legislation raises the question of its possible or necessary elaboration. For example, the regulations valid for the small cooperative model do not apply to agricultural activity. Yet, the small cooperative is not a form of cooperative which threatens the large cooperatives even indirectly. It is merely a work organization unit whose primary function is to rationalize operations and simplify the bookkeeping and accounting of the cooperatives.

New decrees also regulate integration of small-scale production and expansion of its activities. According to these decrees, cooperative groups specialized for industrial and service work are independent accounting organs with self-management and economic independence established by their members. However, the decrees differentiate between industrial and service-specialized groups. There is some danger that such separate regulation may cause problems in practice: In a given case, an industrial and an agricultural special group may be operating under differing stipulations. If, however, we presume that using possibilities provided by law, essentially the same terms are arrived at for those working in both groups, then the question is whether or not differing legal stipulations are actually needed. Presumably it would have been wiser to formulate a uniform basic law and differentiate within its framework as necessary.

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PROSPECTS FOR 1981-1990 ECONOMIC PLAN PUBLISHED

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[Article by Mieczyslaw Nasilowski: "Variant Hypothesis of the Ten-Year Plan in Poland in the Years 1981-1990"]

[Text] Forecasting the future is generally deceptive, because there is no scientific way to foresee the concomitance of diverse conditions which determine the scale of possible and necessary actions. From the scientific point of view it is permissible to assume various working hypotheses and on the basis of them to construct variants illustrating the fundamental relationships in a rather broad scale of probable actions.

I am reviewing three basic variants:

1. The variant of optimistic hopes.
2. The variant of moderate actions.
3. The variant of pessimistic anxieties.

These variants will be the hypothetical form of a look at future trends in development in the realm of the basic macroeconomic sizes related to the generation and distribution of national income. I do not intend to use any methods of econometric extrapolation which create the impression of depth but are unreliable for periods of forced rates of growth and deep breakdown. Such a distorted path of economic growth cannot be logically extrapolated into the future. For this reason the refined methods of estimating parameters which adapt the structure of theoretical function to empirical values are better replaced with intuition located in a rather broad but probably distribution of possible actions, closed in at the top by optimistic hope and limited at the bottom by pessimistic fears that it is not possible to obtain more than is dictated by the experience of the past, the initial state of the economy, and healthy reason.

The purpose of these hypothetical deliberations is to show the possibilities for an increase in the real consumption fund of the society under conditions where the country is in tremendous debt, a debt which was about 25 billion dollars in 1980 with a clear tendency towards further growth during the next few years. The necessity of repaying the financial

obligations weighing down the economy will have a major impact in the future on relations between generated income and the income remaining for distribution for accumulation and consumption and therefore on the possibilities for a rise in the society's living standard.

Overwhelmed by an excess of daily problems and the urgent difficulties to be resolved within the framework of what is called the program for the country's economic stability, we have no time to think about what we face in the long-range perspective of the 1980's, what price the society will still probably have to pay for an irresponsible policy of investment to accelerate economic growth based largely on the 1970's easy credit from western countries.

I begin with the assumption that in the 1980's, even the latter half, there are no possibilities for forcing the national income growth rate through a renewed extension of investment expansion and a rapid rise in employment. Freed production reserves in the fundamentally reformed economy will be able to provide for a 5-7 percent growth rate of national income in the most optimistic variant, but in the pessimistic variant this figure is 3-5 percent per year. In hypothetical calculations I start with the real value of generated national income in 1980 as expressed in constant 1977 prices and use chain indices of growth in the years 1981-1990 (See Table 1 [next page]).

There is some doubt as to whether the assumption of a growth rate of national income amounting to 5, 4, or 3 percent in the three successive variants already in 1982 and 1983 is correct. This positive rate, however, is calculated on the lowest level of national income reached in 1981 as the result of a decline of at least 10 percent in the optimistic variant and 15 percent in the pessimistic variant in the national income achieved in 1980. Given the assumed growth rates in the level of national income, the size of 1980 national income will not be reached before the beginning of 1984 in the optimistic variant or the end of 1986 in the pessimistic variant. Hence, a minimum of 2 years and a maximum of 5 years will be needed to make up merely for the losses in national income which occurred in 1981.

Insofar as the growth rate in national income up to the year 1985 will largely come from the conversion of production and investments in order to coordinate material demand with the production capacity of the national economy, during the last half of the 1980's an increasingly greater role should be played not so much by further expansion of the production apparatus as by its modernization above all. I think that an average growth rate of national income of 5.7 percent to 3.7 percent on the average throughout the year is a realistic assumption and overall rather optimistic.

In order to estimate the rate of growth of national income for distribution, first of all we need a variant analysis of the probable growth of imports and exports. All the variants start with the actual level of the

Table 1. Hypothetical Growth Rate of Generated National Income in Poland in the Years 1981-1990 (Fixed 1977 Prices)

(a) Lata	Tempo-wskaźniki (b) łańcuchowe			Dochód narodowy w mld zł (c)		
	r_1	r_2	r_3	D_1	D_2	D_3
1980	100	100	100	1633,3	1633,3	1633,3
1981	90	88	85	1469,9	1437,3	1388,3
1982	105	104	103	1543,5	1494,8	1430,0
1983	105	104	103	1620,6	1554,6	1472,9
1984	105	104	103	1701,7	1616,8	1517,0
1985	105	104	103	1786,8	1681,4	1562,5
1986	105	104	103	1876,1	1748,7	1609,0
1987	106	105	104	1968,7	1836,1	1673,8
1988	106	105	104	2108,0	1927,9	1740,8
1989	107	106	105	2255,5	2043,6	1827,8
1990	107	106	105	2413,4	2166,2	1919,2
(d) Średnie roczne tempo w latach 1981-1990				5,7%	4,7%	3,7%

[Key]:

- (a) Year
- (b) Rate -- chain indices
- (c) National income in billions of zlotys
- (d) Mean annual rate in the years 1981-1990

difference between imports and exports reached in 1980. Imports and exports are expressed in circulated zlotys in constant 1977 prices. The whole hypothetical calculation is based on the need for economical management to save as much as possible so that exports exceed imports by the greatest possible amount in order to regulate the debt service costs. This is why in all the variants I am assuming a higher growth rate for exports in relation to the assumed rate of imports (see Table 2).

In order to maximize the amount by which exports exceed imports, it is necessary on the one hand to minimize the growth rate of imports and to maximize the growth rate of exports, but too low a rate of growth for imports will cause the growth rate of national income to be lowed, while too high a rate of exports will mean restrictions related to the domestic demand for production and consumer goods being exported and also interfere with profitable sales of these goods on foreign markets. The maximizing then of the surplus of exports over imports in order to regulate the costs of debt service therefore is clearly in conflict with both the growth rate of national income and also the growth rate of the consumption of the society.

The difference adopted in the optimistic variant for growth rates of imports (6.7 percent) and exports (14.3 percent) seems great enough and by no means easy to make a reality in the light of the capabilities

Table 2. Hypothetical Dynamics of Imports (Im) and Exports (Ex)
(in fixed 1977 prices; zlotys in circulation)

	$\Delta Im/Im$			$\Delta Ex/Ex$			Im_0	Im_1	Im_2	Im_3	Ex_1	Ex_2	Ex_3	Ex_4
	1	2	3	1	2	3								
1980	100	100	100	100	100	100	644.8	644.8	644.8	644.8	591.8	591.8	591.8	591.8
1981	101	100	99	105	101	98	651.2	644.8	644.8	638.4	621.4	597.7	580.0	580.0
1982	103	102	101	110	104	102	670.8	657.7	657.7	644.8	683.5	621.6	591.6	591.6
1983	105	104	103	112	105	103	704.3	684.0	684.0	664.1	765.6	652.7	609.3	609.3
1984	105	104	103	113	107	105	739.5	711.4	711.4	684.1	865.1	698.4	639.8	639.8
1985	107	106	104	115	108	106	791.3	754.0	754.0	711.4	994.8	754.3	678.2	678.2
1986	107	106	104	105	110	108	846.7	799.3	799.3	739.9	1144.1	829.7	732.5	732.5
1987	108	106	105	115	112	108	914.4	847.3	847.3	776.9	1315.7	929.3	791.0	791.0
1988	108	107	105	116	112	109	987.6	906.6	906.6	815.7	1526.2	1040.8	862.3	862.3
1989	109	107	106	116	112	109	1076.5	970.0	970.0	864.6	1770.4	1165.7	939.9	939.9
1990	109	108	106	117	112	110	1173.4	1067.6	1067.6	916.5	2071.3	1305.5	1033.8	1033.8
(a) Średnie roczne stopy wzrostu w latach 1981-1990							6.7	5.5	5.5	4.0	14.3	9.1	6.6	6.6

[Key]:

(a) Mean annual growth rate in the years 1981-1990

Table 3. Amount by Which Exports Exceed Imports in Billions of Circulating Zlotys (Constant 1977 Zlotys)

Year	V a r i a n t s		
Lata	Variant 1	Variant 2	Variant 3
1980	—53,0	—53,0	—53,0
1981	—29,8	—47,1	—58,4
1982	12,7	—36,1	—53,2
1983	61,3	—31,3	—54,8
1984	125,6	—13,0	—44,3
1985	203,5	0,3	—33,2
1986	297,4	30,4	—7,4
1987	401,3	82,1	14,1
1988	538,6	134,2	46,6
1989	693,9	195,7	75,3
1990	897,9	257,9	117,3

of the national economy and the emerging economic situation on the international markets. In the pessimistic variant, this difference is too small in relation to the country's financial obligations, although the assumed export growth rate, which averages 6.6 percent during the year is possible to achieve even if the concomitance of external and internal circumstances proves unfavorable.

Table 3 presents the size of the amount by which exports could exceed imports in the three variants being analyzed.

The adverse foreign trade balance in 1980 can be eliminated in the optimistic variant by 1982, but this will not occur in the pessimistic variant until 1987 and in the moderate variant until 1985. From the viewpoint of the need to regulate the high costs of foreign debt service, we cannot be satisfied with either the moderate or pessimistic variants. We must use maximum effort over the next 10 years to achieve an average of at least 14 percent annual growth rate for exports and at the same time a mean annual import growth rate approximating 6.7 percent. This is the basic condition for slowing the rise and then gradually reducing our indebtedness to our creditors.

Here an important question comes up, that of when there is the chance of gradually reducing our indebtedness. Not even a tentative answer can be based on translating the entire amount by which exports exceed imports into dollars. Instead we can count only that portion which applies to what we call II payments area, where the foreign trade balance is expressed in convertible foreign currency. To estimate this balance I am assuming a consistent decline in the share of imports from II payments area [capitalist countries] in the overall total of probably imports, from 44 percent in 1980 to 35 percent in 1990, and a consistent rise in the share of exports to II payments area in the overall total of exports from 44 percent in 1980 to 52 percent in 1990. The country's balance of payments situation will force us to this type of shift in the

Table 4. Hypothetical Estimate of Volume of Imports and Exports, and Export Surplus to Payments Area II

(a) Year	(b) Imports			(c) Exports			(d) <i>Nadwyżka</i>					
	1	2	3	1	2	3	(e) <i>w mld zł</i>			(f) <i>w mld \$</i>		
							1	2	3	1	2	3
1980	283.7	283.7	283.7	260.4	260.4	260.4	-23.3	-23.3	-23.3	-0.5	-0.5	-0.5
1981	273.5	270.8	268.1	279.6	269.0	261.0	6.1	-1.8	-7.1	0.1	-0.04	-0.16
1982	268.3	263.1	257.9	307.6	279.7	266.2	39.3	16.6	8.3	0.87	0.37	0.18
1983	267.5	260.0	252.3	352.2	300.2	280.3	84.7	40.2	28.0	1.86	0.89	0.62
1984	273.6	263.2	253.1	406.6	328.2	300.7	133.0	65.0	47.6	2.96	1.44	1.06
1985	284.9	271.4	256.1	477.5	362.1	315.5	192.6	90.7	69.4	4.28	2.02	1.54
1986	296.3	279.8	258.9	512.1	414.9	366.3	275.8	135.1	107.4	6.13	3.00	2.39
1987	320.0	296.5	271.9	657.9	464.7	395.5	337.9	168.2	123.6	7.51	3.74	2.75
1988	345.7	317.3	285.5	763.1	520.4	431.2	417.4	203.1	145.7	9.28	4.51	3.24
1989	376.8	339.5	302.6	920.6	606.2	488.7	543.8	266.7	186.1	12.1	5.93	4.14
1990	410.7	366.7	320.8	1077.1	678.9	537.6	666.4	312.2	216.8	14.8	6.94	4.82

[Key]:

- (a) Year
- (b) Imports
- (c) Exports
- (d) Surplus
- (e) In billions of zlotys
- (f) In billions of dollars

geographical structure of imports and exports. Given the assumption that the value of a dollar in imports and exports will amount to 45 circulating zlotys, the size of the surplus of exports over imports in dollars in the successive variants would be as in Table 4.

In foreign trade turnovers with capitalist countries, a favorable foreign trade balance can be achieved in 1982. Its absolute value expressed in dollars is very small at the outset even in the optimistic variant, but in all the variants the favorable balance will grow as time passes, as the result of the fact that there will be a more rapid growth rate for the volume of exports over imports. The above estimate does not take into account any possible price effect, because it is exceptionally difficult to forecast the structuring of the terms of trade. Nonetheless, it may be supposed that the price effect in the realm of imports and exports is more likely to make the favorable foreign trade balance worse than it is to make it better.

For convenience in reasoning, I am assuming that imports are financed from foreign-exchange income of exports (although they can be financed on credit), but the surplus of exports over imports is designated for what we call debt service. I do not have exact information as to the size and schedules of credit repayments or the interest rates to be applied. It may be assumed that up until 1985 the repayment of intermediate- and long-term credit will average 7.5 billion dollars during the year, growing to an average of about 11 billion dollars during the year in 1986-1990. The balance of the interest on credit will probably be an average burden of from 3 to 3.5 billion dollars per year on the country's balance of payments. If the assumptions made are realistic, then we come to the following conclusions:

In the pessimistic variant the surplus of exports over imports which can be achieved to the year 1988 is not adequate to pay even for the interest alone, to say nothing about the need to repay annual credit installments.

In the moderate variant, probably from 1987 on we would be able to pay the interest due our creditors out of the surplus obtained, and in 1989-1990 a certain part of the foreign-currency surplus could be used to replay a small portion of the annual credit installments.

In the optimistic variant the full cost of debt service would not be affordable for us until 1990, but the interest due could be repaid out of the surplus achieved tentatively beginning in 1985. This means that even in the most optimistic variant, we are not able to repay even the interest alone during the next few years. Therefore, where are we to get the funds to repay the annual installments on the credit itself?

I see no possibility of further reducing imports from II payments area, owing to the adverse consequences in the realm of the national income growth rate and the rate of utilization of the existing production system. The decline in the absolute level of imports compared to the 1980

level, as assumed in all three variants, would have to be compensated for to a certain extent by a corresponding rise in the share of imports from the socialist countries. Co-production imports of spare parts, machinery, and equipment necessary to modernize the production system, and so on, from II payments area, however, cannot be replaced by imports from the socialist countries. Further effort in this direction would have an impact on production quality and export capabilities of the national economy. Whatever we would gain from reducing imports we would lose to a greater extent from restricting exports, to say nothing of the adverse consequences which would result from a restriction of imports. For this reason our main effort should be aimed at maximizing the export growth rate and not minimizing the sizes of imports. Nevertheless, it is difficult to expect that during the next few years the export growth rate can exceed an average of 12 percent per year or that after 1985 it can exceed an average of 16 percent per year, although we have to do everything possible and economically profitable to see that the hypothetical export growth rates assumed are exceeded. Only a dynamic increase in exports can insure that the national economy will be able to meet its payment obligations. This is an extremely difficult task in view of the distorted pro-export structure of the national economy, the low level of organizational efficiency of the foreign trade system, the low level of competence of a substantial share of the employees of that ministry, and also the anti-export attitudes of our society.

In this dramatic situation the only way out is to incur further debts to meet the current costs of debt service or ask for a moratorium, which means a further extension of the deadlines for repaying our obligations. In the opposite case we will be forced to declare bankruptcy, which means our national economy is insolvent vis-a-vis its creditors. The obtaining of new credit is more and more difficult given our limited solvency and the absence of political stability in our country. It can still be obtained, but at very high interest rates with a reliable guarantee or stock-in-trade, existing raw materials resources. For us a moratorium is a necessary evil. It only shifts the scale of difficulties to later years, in which it is true our balance-of-payments capabilities should be better, but not so much better that it would be possible to repay our increased debts in the future without great sacrifices from the society. The obtaining of a moratorium of way 3 billion dollars today means that in 3 years we will have to repay about 5 billion dollars. Hence, there is no reason to rejoice over obtaining a moratorium granted us by our western creditors, who in this way keep our economy out of bankruptcy, although in essence they are protecting their own interests, having greater hope of being repaid in the future.

The previous hypothetical calculation still does not take into account the consequences of the costs of debt servicing in the structuring of the consumption of the society. The realistic fund of consumption is a component part of national income for distribution. To this end, the hypothetical values of national income (see Table 5) should be

Table 5. Hypothetical Estimate of Distributed Income (in Fixed 1977 Prices)

(a) Lata	(b) Dochód podzielony w mld zł			Tempo — wskaźniki (c) łańcuchowe		
	D_1	D_2	D_3	r_1	r_2	r_3
1980	1686,3	1686,3	1686,3	100	100	100
1981	1499,7	1484,4	1446,7	89,0	88,0	85,6
1982	1530,8	1530,9	1483,2	102,1	103,1	102,5
1983	1559,3	1585,9	1527,7	101,9	103,6	103,0
1984	1576,1	1629,8	1561,3	101,1	102,8	102,2
1985	1583,3	1681,1	1595,7	100,5	103,1	102,2
1986	1578,7	1718,3	1616,4	99,7	102,2	101,3
1987	1587,4	1754,0	1659,7	100,6	102,1	102,7
1988	1569,4	1793,7	1694,2	98,8	102,3	102,1
1989	1561,6	1847,9	1752,5	99,5	103,0	103,4
1990	1515,5	1908,3	1801,9	97,0	103,3	102,8

[Key]:

- (a) Year
 (b) Distributed income in billions of zlotys
 (c) Rate -- chain indices

Table 6. Accumulations and Their Share of National Income

Year Lata	(a) w mld zł			(b) w %		
	A_1	A_2	A_3	$\frac{A_1}{D_1}$	$\frac{A_2}{D_2}$	$\frac{A_3}{D_3}$
1980	354,1	354,1	354,1	21,0	21,0	21,0
1981	269,9	237,5	217,0	18,0	16,0	15,0
1982	275,5	229,6	192,8	18,0	15,0	13,0
1983	296,3	269,6	229,2	19,0	17,0	15,0
1984	331,0	309,7	265,4	21,0	19,0	17,0
1985	364,2	353,0	303,2	23,0	21,0	19,0
1986	378,9	378,0	323,3	24,0	22,0	20,0
1987	396,9	403,4	348,5	25,0	23,0	21,0
1988	408,0	430,5	372,7	26,0	24,0	22,0
1989	421,6	462,0	403,1	27,0	25,0	23,0
1990	409,2	477,1	414,4	27,0	25,0	23,0

[Key]:

- (a) In billions of zlotys
 (b) Percentages

corrected to include the assumed balance of payments of foreign trade turnovers in the three variants being considered.

In the optimistic variant, despite the highest mean annual growth rate for generated national income, the growth rate of national income for distribution -- after taking into account the effects of the balance of payments of foreign trade turnovers -- would amount to barely 0.1 percent throughout the decade, beginning with its lowest level in 1981. Each year right up to the year 1990 income for distribution would nonetheless be smaller than the level achieved in 1980. In the moderate variant, the mean annual growth rate of income for distribution would amount to 2.8 percent, and in the pessimistic version it would be 2.5 percent in relation to 1981

This income would have to be distributed for the purposes of accumulation and consumption. In 1980 the share of accumulation in 1977 prices amounted to 21 percent, of which 18.5 percent was the net investment rate and only 2.5 percent was a rise in operating capital and reserves. During the next few years the rate of accumulation must be reduced, but even beginning in 1984-1985 this rate should gradually increase. This is justified by the needs to remove structural imbalances, to modernize the production system, to increase investment outlays for housing construction and the related technical and social infrastructure, and to invest far greater resources in the protection of the natural environment. The rise in the share of the national income devoted to accumulation during the latter half of the 1980's is also aimed at making up for a substantial decline in this share at the beginning of the 1980's and the creation of material conditions for increasing the growth rate of generated national income.

For a further hypothetical analysis I am assuming the following shares of accumulation in national income for distribution in the three variants we have been considering up until now (see Table 6).

I am assuming that even in the optimistic variant the share of accumulations in national income will not exceed 27 percent. Let us note that the significant rise in the share of accumulations in this variant is accompanied by a very low growth rate for the accumulation fund, which averages 1.5 percent compared to the 1980 level.

In the moderate variant, the share of accumulations is 2 points lower than in the optimistic variant, but the growth rate of the accumulation fund would already be double, averaging 3 percent per year, because in this variant I assumed the most favorable ratio of the rise in national income for distribution to the rise in generated national income.

The pessimistic variant projects the lowest share of accumulations in national income, although the accumulation fund in this variant will rise at an average rate of 1.6 percent per year, and hence somewhat more rapidly than in the optimistic variant.

Table 7. Hypothetical Level of Total Consumption and Consumption per Inhabitant

Year Lata	(a) Konsumpcja w mld zł			Prognoza budżetowa (c) $\frac{K_1}{L}$	(b) Konsumpcja na głowę		
	K_1	K_2	K_3		$\frac{K_1}{L}$	$\frac{K_2}{L}$	$\frac{K_3}{L}$
1980	1332.2	1332.2	1332.2	35759.4	37254	37254	37254
1981	1229.8	1246.9	1229.7	36099.4	34067	34541	34066
1982	1255.3	1301.3	1290.6	36428.0	34460	35723	35423
1983	1263.0	1316.3	1298.5	36743.4	34374	35824	35340
1984	1245.1	1328.1	1295.9	37045.7	33610	35634	34981
1985	1219.1	1328.1	1292.5	37333.7	32634	35574	34620
1986	1199.8	1340.3	1293.1	37593.2	31915	35653	34397
1987	1190.5	1350.6	1311.2	37854.4	31449	35679	34638
1988	1161.9	1363.2	1321.5	38117.5	30469	35763	34669
1989	1140.0	1385.9	1349.4	38382.4	29701	36107	35157
1990	1106.3	1431.2	1367.5	38650.0	28624	37030	35899
1980-1990	-2.0%	0.7%	0.4%	0.77%	-2.6%	0.0	-0.4%

[Key]:

- (a) Consumption in billions of zlotys
- (b) Forecast of population
- (c) Per capita consumption

It may seem to more than one reader that the assumptions in the realm of the share of national income devoted to accumulation are not very realistic, inasmuch as all three variants show a growth rate of the accumulation fund which is very low in great contrast to past experience, but the country's investment needs are enormous and will be in the future. The assumptions adopted show that the volume of investment outlays and the rise in operating capital in 1990 will be far smaller than in 1979, but the consumption of the society is the barrier which restricts the possibility of increasing the share of national income devoted to accumulation. Even with such a low assumed growth rate for accumulation, consumption in the various variants would be structured as in Table 7.

In the optimistic variant, the consumption fund would decline in comparison to its 1980 level at a rate of -2 percent, and per capita on an average of -2.6 percent per year. In the other variants we would indeed obtain a favorable growth rate for the total consumption fund, but, on the other hand, consumption per inhabitant would remain stable or even show a slight decline.

The variant which is optimistic from the viewpoint of the assumed rate of growth for generated national income and the need to regulate financial obligations abroad becomes the pessimistic variant from the viewpoint of the possibility of increasing society's consumption. This paradox is merely an expression of the conflict not only between accumulation and consumption but also between the country's indebtedness and society's consumption. Whatever reservations we might formulate vis-a-vis the assumptions adopted in the different variants, they have this irrefutable virtue that they make it possible to replace general deliberations with more concrete analysis.

We have long been aware of the conflicts between accumulation and consumption and also between the country's indebtedness and consumption.* I was interested not in confirming these conflicts but in showing the severity, the degree of the impending tensions in the ten-year perspective, and the scale of probable sacrifices required of society.

Variant analysis shows that attempts to force the export growth rate and minimize the import growth rate in relation to the sizes assumed in the optimistic variant would indeed increase the total foreign-exchange funds necessary to cover the rising costs of debt servicing, but at the same time, through a further decline in the national income for distribution it would reduce even more the level of consumption of the society.

*Only a small number of economists have tried to question it. Distinguishing himself among them was Prof. A. Krawczeski in his article, "Errors in Theory, Corrections in Practice," *ZYCIE GOSPODARCZE*, 1972, No. 49. I responded to these unjustified accusations creating a theoretical foundation for what is called "propaganda of success" in the article, "About Alleged Errors in the Theory of Socialist Accumulation," *ZYCIE GOSPODARCZE*, 1973, No. 2.

The easier variants (that is, the moderate and pessimistic) of the growth of the favorable foreign trade balance of payments do indeed create the possibility of a minimal rise overall in consumption in relation to 1980, but they do not provide for a per capita rise in consumption. At the same time, for the next 7 years they do not guarantee the surplus necessary even to meet the interest alone to be paid on the credit.

This hypothetical variant analysis shows how slim the possibilities are for strategic maneuvering during the next 10 years, mainly because of the country's tremendous indebtedness. We have rather quickly come through the socioeconomic crises which have occurred in our country in the past, because the national economy was not in debt at all or not to a very great extent. The scale of indebtedness reached in the 1970's is blocking any sort of possibilities for free maneuvering for the next dozen and some years too. For this reason I think that out of all the errors committed by the Gierek-Jaroszewicz team, the most serious in its repercussions for the society have been the short-sighted, irresponsible policy of indebtedness and the careless use -- and actually waste -- of a substantial proportion of the credit obtained. Effects in the form of expansion of the producer production system are and will continue to be wasted as the result of the inability to use it, owing to glaring structural imbalances and exceptionally restricted possibilities for importing supplies and spare parts. Before new possibilities for using it appear, this system will already be largely obsolete technically speaking.

The society is amazed over the fact that certain "architects" of the credit policy waged during the 1970's still hold obvious positions in the government and have even played not such a small role in such watered down successive versions of the "Report on the State of the Economy," which are designed not to give the full truth about the country's actual economic situation or show who share the blame for the policy leading to bankruptcy, a policy which ultimately the nation will have to pay for in the form of a substantial decline in consumption.

For the sake of justice we should note that in the 1970's there was no article published nor public statement made of expert opinion which warned the leadership of the consequences of excessive indebtedness of the country. On the other hand there were various brands of "theory" strengthening the leadership in the conviction that they were doing the right thing, because imports were to spur exports, and inflation was to deflate the nominal value of indebtedness and to a great extent ease the burden of interest on credit. Thus, the concept of an open plan on the import of capital goods and supplies, which for many years eased and actually hid the growing structural imbalances. The technocratic concept of modernizing the national economy through imports of western technology and the easy repayment of credit through developed exports was intended to repudiate the concept of a decisive socioeconomic reform put forth by economists. A poor selection of technological imports which did not fit our technology or which were artificially glued

together into an ineffective, inefficient system in the sphere of production and a glaringly unjust system in the sphere of distribution led first of all to the extinction of the strategy of accelerated growth and then to a catastrophic breakdown of any sort of growth within a few years.

Some economists are now proposing that the way out of the catastrophic situation is a radical decline in the investment rate. They start with a realistic appraisal of the actual condition, in which the lack of materials, raw materials, fuel, power, and spare parts is seen as the main cause for the progressive decline in national income and the failure to make use of existing production capacity. For this reason, any further reduction in the investment rate, in their opinion, will make it possible to shift funds from investments to the supplies needed in plants in operation, which may become one of the deciding factors to bring health to the economy. This will lead, because of multiple effects (taken to be the ratio of final production to what is called raw-material input), to a far greater increase in production than the construction of new investment projects would.

There is no doubt that the net investment rate accomplished in 1980, 18.5 percent, was definitely too high considering the capabilities of the national economy. No country in the world invests so much during a period of economic crisis, although this crisis under our conditions has specific qualities not found in other countries. A reduction of this rate in 1981 to about 14 percent is also inadequate in my opinion.

The reduction of the investment rate will undoubtedly lead to certain untapped reserves for a rise in production, although it is exceptionally difficult to establish the extent to which the additional rise in production on the basis of shifting funds from investments to supplies of materials and spare parts can make up for the adverse economic effects and difficult-to-measure social consequences which will accompany a reduction of investment outlays. Here we should remember the limited extent to which many investment funds can be distributed and the very imperfect replaceability of these funds in relation to essential supplies. The failure to take this aspect into account can lead to an overestimation of the effects of converting investments and to the formulation of an excessively facile program for getting out of the crisis.

Let us take a hypothetical look at the variant of the strategy of development featuring a far greater limiting of the share of national income devoted to accumulation (and therefore investments) than the pessimistic variant previously examined (see Table 8). The lowest share, and therefore the level of accumulation, would come in 1982 and 1983, and then there would be a gradual rise in the share of distributed income devoted to accumulation up to the year 1990, in which the proportion of the final distribution of income would be the same as in 1980. The effect of this maneuver would be a significant acceleration in the growth rate of generated national income caused by better use of the production

Table 8. Hypothetical Effects of the Conversion of Investments

(a) Lata	r_t	Dochód wytworzo- ny (b) D_t w mld zł	$\frac{\Delta Jm}{Jm}$	Jm_t w mld zł (c)	$\frac{\Delta Ex}{Ex}$	Ex_t w mld zł (d)	Nad- wyżka w mld zł (e)	Dochód podzielony D_t w mld zł (f)	$\frac{A_t}{D_t}$	A_t	K_t	$\frac{K_t}{L}$
1980	100	1633.3	100	644.8	100	591.8	-53.0	1686.3	21	354.1	1332.2	37254
1981	85	1388.3	99	638.4	102	603.6	-34.8	1423.1	12	170.8	1252.3	34690
1982	107	1485.5	102	651.0	105	633.8	-17.3	1502.8	6	90.2	1412.6	38778
1983	108	1604.3	103	670.7	107	678.2	7.5	1596.8	8	127.7	1469.1	39982
1984	104	1668.5	103	690.8	108	732.4	41.6	1626.9	10	162.7	1464.2	39524
1985	103	1718.5	103	711.5	110	805.7	94.2	1624.3	12	194.9	1429.4	38287
1986	103	1778.1	104	740.0	111	894.3	154.3	1623.8	14	227.3	1396.5	37148
1987	103	1823.2	104	769.6	112	1001.6	232.0	1591.2	16	254.6	1336.6	35309
1988	103	1877.9	104	800.3	112	1121.8	321.5	1556.4	18	280.2	1276.2	33481
1989	104	1953.0	105	840.4	112	1256.4	416.0	1537.0	20	307.4	1229.6	32036
1990	104	2031.1	105	882.4	112	1407.3	524.8	1506.3	21	316.3	1190.0	30789

[Key]:

- (a) Year
- (b) Generated income D_t in billions of zlotys
- (c) Jm_t in billions of zlotys
- (d) Ex_t in billions of zlotys
- (e) Surplus in billions of zlotys
- (f) Distributed income D_t in billions of zlotys

system, as the result of improvement in supply. I am assuming that in the course of 2 years we could even make up for the losses in national income which occurred in 1981. A substantial decline in the share of national income devoted to investments, however, would be bound to have an impact on the growth rate of national income in years to come, when it would probably have to be somewhat lower than the growth rate assumed in the pessimistic variant. This variant of the strategy of development does not relieve us, however, of the need to maximize the surplus of exports over imports in order to cover the costs of debt servicing. I have assumed that we must achieve any additional surplus already in 1983. I think that this is a more realistic hypothesis than those which I presented earlier in the pessimistic variant and even in the moderate one. With these assumptions the prospects for a rise in the society's consumption are still disturbing. The effect of a substantial reduction in the share of distributed national income devoted to accumulation is a rise in per capita consumption at a rate of 11.8 percent in 1982 and 3.1 percent in 1983. This rise would make up for the inevitable decline in consumption in 1981 and then some. In later years, beginning in 1984 and continuing until 1990, there would be a systematic decline not only in per capita consumption but also in total consumption.

With the necessary restriction of the share of national income devoted to investments, therefore, we must exhibit the greatest possible care so protecting the level of consumption does not cost us too much in the somewhat distant future. With a low investment rate it will be difficult to overcome structural imbalances and liberate the multiple effects. The possibilities for modernizing the existing production system and for developing a proexport production structure will also be limited. Without shaping the proexport structure of the economy over the next 10 years we will have to export everything that can be sold on foreign markets, but not necessarily at profitable prices.

Since even a substantial reduction in the investment rate is no assurance of an easy way out of the crisis, we should seek solutions to the Gordian knot. Not the sword of Alexander the Great but joint cooperation between the government and the society simultaneously in all sectors can gradually but systematically lead to improving management efficiency in the various areas of the national economy, but the problematics of this fall in the sphere of an advanced program of action for the near and distant future.

A thorough reform of the system aimed at socializing the state, that is, giving the institution over to greater social control, socializing the means of production by introducing real employee self-government, and socializing our central planning (that is "debureaucratization" of the decision-making mechanism) can liberate initiative aimed at obtaining the greatest possible effects from the available resources. This would create institutional conditions for upgrading the quality of life, better meeting needs through better adaptation of the item-assortment structure and quality of production to the needs of customers, and also

more justly distributing the limited growth and even stabilizing the size of the real consumption fund. Great untapped reserves for improving the quality of our life are to be found only in the possibilities for making better use of existing production potential.

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RESOLUTION BY COMMITTEE OF ECONOMIC SCIENCES PUBLISHED

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[Resolution of the Polish Academy of Sciences' Committee of Economic Sciences: "Awaiting the Reform"]

[Text] Meeting at its first session of the new term on 6 November 1981, the Committee of Economic Sciences of the Polish Academy of Sciences expressed its dedided support for the demands of the community of Polish economists and the expectations of public opinion concerning acceleration of the decisive systems reform in Poland.

This reform should eliminate as soon as possible the directive-distribution methods of management and their corresponding power structures in the form of compulsory associations and industrial branch-type ministries. It should thereby prevent further direct interference on the part of the political and administrative apparatus in the matter of economic activity and the operations of enterprises and should change the nature and scope of authority of the Planning Commission. At the same time the decisive reform should lead to the speedy creation of a new economic mechanism based on principles of full self-financing and the independent making of decisions at the enterprise level and facilitate a direct relationship between suppliers and consumers. In the long range it is a question of seeing that the state can only indirectly, that is, solely through the use of economic instruments, exert an influence on self-governing enterprises in keeping with the goals accepted in the central plan as the result of general national discussion.

It is only a reform such as this which can create within the society a sense of joint management and joint responsibility for the decisions made, liberating entrepreneurship and initiative, and insuring that the working forces will have an interest in production which meets the needs of the society and in the thrifty use of resources. Hence the implementation of the reform is an essential condition to getting Poland out of the deep economic and sociopolitical crisis. Its economic effects will not be immediate, however. During the initial period it will create difficulties and tensions in the structuring of employment, market prices, and the income distribution ratios. It will also be a threat to the further

existence of the less efficient enterprises. We have no other way out, however, and this is the price we have to pay for the necessary transition to the rules of operation based on the complete principle of self-financing and material responsibility for the results achieved.

The current state of affairs is creating supreme anxiety within the community of economists. The old system of running things has already ceased to work, although the legal norms and organizational structures remaining as the result of it are paralyzing social initiative. On the other hand the new system is being introduced far later than the society had expected. Our economy is sensing ever more painfully the expanding systems gap, which has been making the crisis phenomena worse and has been building up the social pressures. The noticeable resistance of conservative elements in the leadership apparatus interested in keeping the previous positions and privileges is not only delaying the implementation of the reform initially projected for the beginning of 1982 but is also leading to a softening of its radical nature.

The country's exceptionally difficult economic situation is a circumstance which is contributing to the slowing effect of the conservative forces, because this situation calls for certain moves which are features characteristic to the management of shortages. Hence it justifies temporarily maintaining directive-distribution methods of allocating resources. On the other hand it may feed the justified fear that, under the influence of conservative elements, there may be a bolstering of tendencies to again solidify such methods of management of the economy.

Indeed what is called a systems provisorium does strive in its program propositions to create a new mechanism with certain essential but temporary limitations on it, but there is the real danger that in practice it may become a successive modified version of the former system.

The current efforts at stability undertaken by the authorities are not sufficiently energetic and effective either. This is linked not only to the absence of adequate reconstruction of the economic administration, especially the central administration, but also to the excessively slow replacement of those people who have been compromised in the public eye, or who have not matured sufficiently to the new conditions and tasks or who sometimes consciously undermine proper initiative undertaken by the central authorities. This is one of the important reasons why the efforts of the officials are not very reliable and why there is not much support for their program, the implementation of which requires redoubled efforts in the work and material sacrifices of a large proportion of the population. The society still has no assurance that the effect of its increased work and the sacrifices it makes will not be wasted. In order to dispell these fears, there should be full social control of the state's whole economic policy.

This is why the Committee of Economic Sciences fully shares the position taken by the National Congress of Economists, as well as that of the PTE officials and the leaders of the academic centers in the country, stating

that it is essential to implement quickly the entire set of decisive changes encompassing the reconstruction of the structure and methods of operation of the central level and also the new principles for the functioning of the enterprises, banks, local units, and so on. Today this is the only chance to liberate initiative and prevent massive waste of funds. We are convinced that the social costs of the radical reform will despite everything be less than the costs of maintaining the former system in this or any other form.

The Committee of Economic Sciences recognizes and welcomes the authorities' initiative in the realm of understanding and agreement with the major social forces in the country, anticipating that this idea will be quickly realized in practice. The new institutional and organizational forms of social understanding will favor the acceleration of the decisive socioeconomic reform in People's Poland which the society is anticipating.

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AREAS FOR IMPROVEMENT OF FINANCIAL OPERATIONS EXAMINED

Bucharest REVISTA ECONOMICA in Romanian No 44, 30 Oct 81 pp 10-11

[Article by Gh. Vilcu of the Ministry of Finance: "Requirements for Balancing the Budgets of Incomes and Expenditures"]

[Text] The economic-financial results obtained during the period covered this year show that the collective leadership and general assemblies in the socialist units worked responsibly to fulfill the 1981 plan tasks under the best possible conditions. In the center of the socialist units' concern was the implementation of the directives and guidelines issued by the top party and state leadership, and those personally by comrade Nicolae Ceausescu, and the decisions of the Second Congress of the Workers Councils with regards to increasing efforts to improve economic efficiency in all areas of activity and to increase the accumulation of funds through the better use of raw materials and materials, the maximum conservation of fuels and energy, the achievement of production according to the planned structure and with the lowest possible costs and highest quality, and so forth.

The Full Achievement of Plan Tasks

In this regard, it is significant to note that over 57 percent of the total number of enterprises have exceeded their profits plan for the first 8 months of this year by over 10 billion lei, many economic units achieved production at lower costs than were planned and savings of hundreds of millions of lei were made as a result of reducing material costs. It is an incontestable fact that the exigent application of the economic-financial mechanism and the carrying out of activities according to the principle of economic-financial self-management and self-administration brought about a strengthening of the spirit of responsibility in the fulfillment of economic and financial indicators and the use of material and monetary resources with higher efficiency. At the basis of decisions in the financial field are, to a great degree, the criteria for economic efficiency.

Certainly, the accounting reviews completed at the end of the third quarter of this year offer a complete picture of the execution of the budgets of incomes and expenditures, but they especially show those sectors where arrears were recorded, as well as those factors that influence the fulfillment of the financial indicators for the current year. For example, despite all the good results recorded, some enterprises did not fulfill their profits plan, which affect both the creation of their development and incentive funds and the payment of funds into the budget, such as: payments

from profits, turning over to society a portion of the value of net production, the taxes on the flow of goods as well as other incomes. Other economic units did not succeed in covering their costs with the funds from their own incomes, a fact which causes financial difficulties. The causes for some of these situations are not hard to determine, if we keep in mind that these units are also recording shortfalls for the main indicators in the economic plan, such as physical and net production, sold and paid-for goods production, deliveries to domestic and customers and for export, and so forth.

Under these conditions, it is necessary for the organs of collective leadership and the workers collectives to work during the remaining period of this year to quickly apply the measures established this year and to resolve on a timely basis all those problems that influence the fulfillment of production tasks for this year. We are especially referring to those measures that are available to all the units and that, when firmly implemented, can contribute to eliminating shortcomings, such as: strengthening order and discipline in production, as well as reviewing the fulfillment of tasks down to the last worker, improving the supply of raw materials, materials, fuels, energy and so forth to the place of production, staying within the limits of planned production costs, eliminating stoppages, increasing the speed of turning over financial and material resources, and so forth. When the failure to achieve production is carefully and responsibly examined, one also finds solutions to correct the situation. With the help of financial-banking organs, this is what was done at the Arad Lathe Enterprise, the Bocsa Metallic Constructions Enterprise, the Focsanu Hydraulic Tools and Elements Enterprise and the Codlea Mechanical Enterprise, with possibilities being identified to recoup the shortfalls recorded in the first quarter of this year in goods production, net production and exports.

A more careful analysis of the economic-financial situation of certain enterprises having arrears under the heading of financial indicators pointed out the fact that although the industrial production plan was not achieved, nonetheless the so-called "common" and "general" expenditures were made at the planned level or even exceeded the planned level. In a number of cases, during the course of production the type of product was changed without also analyzing the financial effects of this switch. The result was that certain enterprises recorded unfavorable effects, with these being reflected as such in the financial results. At the same time, not staying within the limits of planned production costs or, to put it better, exceeding the mentioned costs directly influences the accumulation of monetary resources. The financial results of certain economic units continue to be negatively influenced by a series of costs related to losses caused by production rejects, interruptions in production, interest payments and penalties and so forth. Because of their content, the financial indicators are intertwined with the economic ones, they mutually influence each other and their level of fulfillment influences, for their part, other financial indicators. For example, profits are principally influenced by the level of completing the indicator of sold and paid-for goods production; the over-fulfillment or the failure to achieve profits affects the destinations approved in the plan. Many times, the sold and paid-for goods production is not fulfilled because of delays encountered in receiving payment for the delivered goods, services and projects from domestic and foreign clients.

The data supplied by the enterprises and centrals show the tendency towards increasing the volume of documents regarding delivered products and projects and services completed but not paid-for, which shows an insufficient activity in this sector if we keep in mind that the timely payment for goods sold influences the flow of all financial activities. Something else, some enterprises, because they did not proceed according to the regulations in effect regarding pursuing payments for delivered goods and completed services, are encountering financial difficulties, are diminishing their ability to make payments and are incurring unjustified interest payments and penalties. The financial and banking inspection organs, in pursuing this problem at 43 enterprises (in the sectors of machine building, light industry, the chemical industry, the metallurgical industry and so forth), helped the leaderships of the enterprises in question in establishing certain effective measures, which should that been taken long ago, that brought about payments from clients in the sum of approximately one-half billion lei, representing over 60 percent of the amount of money owed. From this one can draw the conclusion that it is to the benefit of each economic unit to undertake actions to speed the completion of products and projects that have been started, to strictly adhere to the schedules for deliveries to customers, to effectively pursue the means of payment for delivered goods, to draw up payment documents within a useful timeframe and to present these documents to the user units and banks that will ensure both the regular delivery of products and the carrying out of projects and services according to concluded contracts and orders, as well as the undelayed payment for them, in this way contributing to the improvement of the degree of fulfilling financial indicators and the financial situation.

The Efficient Use of Material and Financial Resources

An important chapter having far-reaching implications in the economic-financial activities of economic units is the manner of using material and financial resources, a field where some shortcomings have appeared. You do not have to be a specialist to understand that as material and financial resources go through a number of cycles in supply, production and sales activities they bring about a higher efficiency for each unit. The standard stock levels regarding raw materials, materials, unfinished products, finished products and so forth represent maximum limits within which the units must stay, regardless of the sector to which they belong.

Experience offers numerous examples where the appropriate attention was not paid to using material and financial resources with a maximum of efficiency, permitting, knowingly or unknowingly, costs that were later proven to be inopportune, uneconomical and inefficient, with unfavorable results spreading over all the activities of the units in question. The shortcomings in this area are reflected in the tying up of financial and material resources in stocks of raw materials and materials, unfinished production, finished goods and in debts from the delivery of products and the carrying out of projects and services, which produce a chain reaction of negative consequences of a financial nature, such as: the lack of available funds in accounts and the decrease in the ability to make payments, resorting to bank credits which bring about penalizing interest payments, the creation of financial difficulties for the suppliers that provided raw materials, materials and so forth. The data from the 30 September review show that in a series of cases the amount of financial and material resources tied up is being maintained at a high level, which requires measures to eliminate them without delay and to appropriately improve the financial situation.

It is in the interest of each economic unit to thoroughly examine its above-normal level of stocks. Depending upon this level, it will implement the most appropriate measures to eliminate these stocks and reconstitute its funds, at the same time working to prevent the formation of new stockpiles and permitting the flow of necessary supplies to be carried out with the limits of approved norms and standards.

The overall group of measures regarding the concentration of forces to carry out activities this year under the best possible conditions will contribute without a doubt to the consolidation of the starting point for the tasks regarding finances in 1982. Financial activities next year must not, under any circumstances, support the effects of certain shortcomings from this year, once again showing the need to eliminate these shortcomings. The tasks in the 1982 budgets of incomes and expenditures must stay within the bounds of the qualitative facets of the current five year plan, with special stress being placed on the more rigorous sizing of resources and the fuller mobilization of reserves in all fields of activity, as well as the use of funds in strict correlation with plan provisions and under a severe regime of conservation.

Sizing Material and Financial Resources in Accordance With the Plan

A significant objective standing at the base of preparing the budgets of incomes and expenditures for 1982 is increasing the accumulation of funds in all socialist units through the improvement and upgrading of activities in all aspects and the growth of economic efficiency. Determining the size of the financial indicators in the budgets of incomes and expenditures for next year cannot be confined to translating the economic plan tasks into value expressions, but it must be the result of the economic thinking of the entire collective for the proper operation of the unit. Thus, the financial indicators will have to reflect to the highest degree the implementation and consolidation of economic-financial self-administration, according to which expenditures must be covered from one's own incomes, beginning with each product and production section up to the level of the enterprise. For this, there is need of much initiative and innovative spirit in approaching the problem of economic efficiency and in identifying the means of making all products profitable, eliminating uneconomical expenditures, rejects, overhead, penalties and so forth, with all these being reflected in an increase in financial results. Likewise, determining the level of the financial indicators for next year is taking place on the basis of updated prices and charges that will ensure in all cases a level of profitability and funds to cover expenditures from the incomes made. Despite all this, special attention will have to be given to eliminating the causes that currently still create losses, requiring measures of a technological, design and organizational nature in order to ensure the carrying out of all activities under conditions of profitability and efficiency.

The drafting and finalizing of the indicators that reflect the obligations of the units to the state budget and the creation of their own development funds must take place, according to the regulations in effect, in the sense that the net income outlined in the plan will provide, on a priority basis, the funds to repay those

funds received from society, to create their own funds for development, incentives and social actions and to make payments to the budget. Along this idea, it is necessary to stress the fact that deductions from profits for the material and financial resources fund, corresponding to these during the plan year, involve responsibilities with regards to setting the size of stocks and especially ensuring a more accentuated growth in the speed of turning over material and financial resources which, in the end, leads to freeing funds and not tying them up.

Similarly, it should still be kept in mind that in the future the economic units will receive credits only to the extent to which they can make repayments on time, requiring the existence of guarantees to this end. This is why we have concerns for determining the volume of the material and financial resources and including them in the budgets of incomes and expenditures for 1982 on the basis of mobilizing all reserves and improving all production and delivery activities, since only in this manner can we attain a better turn over of material and financial resources and, therefore, their use with better results.

Within the framework of concerns of the collectives of specialists, we should not forget the problem of determining the level of overhead costs and general management and administrative costs, requiring not an overall analysis, but rather an analytical one on each type of cost according to necessity and opportunity. We raise this problem since in this section of the budget of incomes and expenditures we can obtain significant reserves that can contribute to the reduction of costs and the increase of profits.

The preparation and finalization of the budgets of incomes and expenditures by the state institutions must be ensured on the basis of implementing measures to maximally restrict all costs, more completely using the already-existing material base, and increasing responsibilities in asking for and using budgetary funds. Providing each institute with the necessary funds will have to directly lead to the improvement of activities in the sense of better satisfying the requirements of the populace.

Without a doubt, the organs of collective leadership in the socialist units, with the broad assistance of the workers, will undertake all the measures that will ensure the achievement of the financial indicators for the current year, as well as prepare the budgets of incomes and expenditures for 1982 under the best possible conditions.

8724

CSO: 2700

INCREASE IN SAVINGS AND LOAN ACTIVITY ENCOURAGED

Bucharest REVISTA ECONOMICA in Romanian No 44, 30 Oct 81 pp 12-13

[Article by professor Dr Mircea Popovici: "Fruitful Work - Savings, Well-Being"]

[Text] During the years of socialism, especially during the last decade, savings activity in Romania has made special progress. This is due to the fact that the country's population has obtained larger and larger incomes, as a result of the work they have done themselves and the consistent policies of our party regarding the systematic improvement of the standard of living, that can cover the current, rational needs of a civilized life and, at the same time, have permitted them to set aside certain amounts of money which will ensure in the future a better and better quality of life for each family and each citizen. The desire of each citizen to have an ever higher standard of living, under the conditions of respecting the principles of socialist ethics and equity which govern all our social life, as well as the continually increased possibility to attain such a life are nothing more, when we extend this to the level of the entire society, than expressions of the natural requirement to increase the well-being of all the people - the supreme goal of the policies of our party and state.

Our party's concern for continually increasing the standard of living has resulted in the increased ability of the populace to save money and an increase in the amount of savings slated for future use deposited at savings and loan banks. The rise and development of the spirit of savings throughout the lifetimes of the people in the cities and the villages can be shown by the synthetic figures that outline the evolution of savings activity. Thus, the most graphic indicator which illustrates the degree of development of savings activity at savings and loan banks - the general balance of the people's savings - has shown an average annual rate of growth of 16.9 percent during the previous five year plan, and during the first three quarters of this year there has been an increase in the balance of the people's savings deposited at savings and loan banks that is 16.6 percent greater than during the same period last year. In addition to an increase in the monetary incomes and the standard of living of the people, this shows that the process of saving money has undergone a powerful development, constituting an efficient manner in which the people use their monetary incomes over time for the purpose of diversifying their consumption and ensuring an ever higher standard of living.

Significant increases have also been recorded with regards to the number of people involved in savings activity. Currently, in the populace there are over 18.5 million

active savings account passbooks, giving an average figure of 841 passbooks per 1,000 inhabitants. In urban areas, the number of savings account passbooks has exceeded the number of inhabitants, with 1,326 passbooks existing for every 1,000 inhabitants. In addition to this there are hundreds of thousands of other depositors who save at the savings and loan banks using current personal accounts and banks savings certificates, while young people and students use stamp savings certificates, school savings checks and student savings passbooks.

The increase in business with the people has been achieved by means of improving the forms and instruments of saving, popularizing permanently and specifically the advantages of saving at the savings and loan banks and expanding services offered to depositors by the savings and loan banks. Thus, in order to aid the workers who want to become consistent depositors at the savings and loan banks without having to travel to the banks themselves there is a simple and advantageous way to do this - regular deposits through the transfer of funds, on the basis of written approval. These deposits can be made at the request of workers in enterprises and institutes into any type of of passbook account or into current personal accounts.

At the same time, there is the possibility of using the current personal account, an instrument for saving and making payments. With current personal accounts, one can make cash deposits into the account or other persons can deposit money into the account at any office in the country or by way of transfers, as well as deposits from incomes (total or partial) stemming from salaries, pensions or other sources. From these accounts, the people can ask the savings and loan banks to carry out different types of services, for example, make payments on telephone bills, radio and television subscriptions, electricity and gas bills, rents, taxes, insurance premiums and others.

Similarly, for the purpose of forming and developing the spirit of saving in students, beginning in the 1978-1979 in some general schools, high schools and professional schools school savings banks were created. Organized on the principle of self-management by students, under the guidance and supervision of the faculty and the parents committees, the school savings banks are designed to teach the students, right from their first classes, to better manage their small savings and to fight against waste and the spending of money on non-useful things.

It is a known fact that a portion of the people's monetary resources temporarily held at the savings and loan banks is used in the development of the national economy, as well as by the people in the form of loans. Therefore, we can see that we are facing an economic process where, on the basis of commonality of interests, there is a temporary redistribution of the monetary funds of the people. Thus, just during the period of 1 January to 30 September 1981, 35,551 loans were made to build and buy private homes worth approximately 1,969 million lei. The total value of the loans made to people as of 30 September was approximately 27,630 million lei. The savings and loan banks have, thus, become the people's banks, places where people can deposit their savings and those who want to obtain a loan get funds to build or buy a private home.

The savings process in our country is also stimulated by the rights and advantages that all depositors enjoy at the savings and loan banks. One of the important advantages given to all depositors at the banks, regardless of the means used to save, is the state's guarantee on the sums that are deposited. This means that depositors can ask the banks at any time for all or some of their deposits and the banks are required to immediately return the deposits made through passbooks, current personal accounts, savings certificates and other means of saving, upon the request of the persons empowered to receive these funds. Depositors at the savings and loans have the right to obtain, as is fitting, I think, not only the sums that were deposited, but also, for an unlimited time, the interest and profits given by the banks, with the laws ensuring the imprescriptibility of these payments.

The state's guarantee on deposits in these banks is based upon the Constitution of the Socialist Republic of Romania itself, which states: "The right to private property is granted by law. Incomes and savings stemming from one's labors can constitute an object of the right to private property..."

The savings and loan banks ensure secrecy with regards to the names of the depositors and the holders of the deposits, the amount of savings and any other information regarding the operations carried out in their name. Depositors at these banks are also ensured of having other rights and advantages, such as: all the services performed by the banks are free and the sums saved, the interest and profits obtained are exempted from taxes or any other type of tax; the right to empower other persons to withdraw sums saved at the banks; the right to influence the payment of sums made in the names of other persons; interest and profits paid by the banks and others.

It is without a doubt that the development of savings activity is also stimulated by the improvements to the organization and operation of the banking units and to the forms and methods of saving and service. One sustained concern has been to broaden the sphere of activities, especially in the large enterprises, worksites and mining and forestry regions, as well as in the new housing developments in the cities and rural areas where service to depositors is not ensured by the postal units and credit cooperatives. Through these actions, the banks hope to provide to an ever greater degree services for the depositor where they work, thus eliminating the time needed to make deposits by going to the banking units.

Special stress will be placed on the development of the means of making deposits at the savings and loan banks on the basis of a written consent for the transfer of monies. This activity will hold a special place in the sphere of concern of the banking units which are operating or will begin operations in all the enterprises having a large number of workers, thus meeting the workers' request to have a banking unit at their place of work.

Keeping in mind that the decisive factor upon which the quality of work depends is, to a good degree, the professional training of all the personnel, special stress will be placed upon raising the level of professional knowledge in order to perfect the understanding of work legislation and standards and to increase the effectiveness in carrying out projects and educate the workers in the spirit of special care for resolving citizens' requests.

Permanently concerned about improving the quality of work, the savings and loan banks will organize their activities so as to carry out their important tasks, making their contribution, alongside all the people, to fulfilling the objectives stemming from the documents of the 12th Romanian Communist Party Congress.

8724

CSO: 2700

POPULARITY OF ROMANIAN COMPUTERS IN PEOPLE'S REPUBLIC OF CHINA

Bucharest VEAC NOU in Romanian Oct 81 p 3

[Article by Livia Bob]

[Text] More than 10 years ago, several modern production units began operations at the Pipera site in Bucharest: Conect, Electronica, the Kinescope Plant, the Computer Enterprise, and the Enterprise for Computer Equipment Repair and Maintenance. The very names of these new factories heralded their leading role in advanced technology branches.

Several days ago, we stopped by the Computer Enterprise, which manufactures a wide range of computer equipment, products which Romania is presently exporting in many countries. This equipment involves large and intermediate capacity computing systems, minicomputers, billing and accounting systems, as well as peripherals and terminals which can be used with other computers than the ones manufactured by the enterprise.

Representative of the potential of Romania's industry, these computer products have been shown over the years at many international meetings and expositions. In 1981 for instance, they were seen at international fairs in Barcelona, Leipzig, Budapest, Brno, Zagreb, Salonica, and Hanover: in Leipzig, the M-118 computer was awarded the fair's gold medal. Two years earlier, the minicomputer Independent-100 also won a gold medal prize.

At the Romanian Industrial Show, held in Beijing during the spring of 1980, computer technology was one of the Romanian products which elicited a great interest among specialists and other visitors. In fact, the computers manufactured at Pipera are among the goods that are traded between Romania and the People's Republic of China (RPC). Actual exports began in 1974, when the chinese bought the Felix C-256 computer from Romania. For three years after 1975, the direct users in our friends' country verified in practice the qualities of the Bucharest-made computer, and beginning in 1978, ordered increasingly higher quantities of the machine. At present, three types of computers are being in constant use in various ministries, research and higher education institutes, and in plants in Beijing, Xian, Chengdu, Zhengzhou, Shanghai, and so on: they are the Felix C (156 and 512), the

Independent-100, and the M-18. By the end of this year, the outstanding contracts will bring to more than 50 the number of Romanian computers in RPC. Romanian specialists install the computers at their site, and then provide technical assistance for about one year. As a result, Romanian computer specialists are always in residence in the friends' country. However, the collaboration with our chinese partners does not stop there, but is much more complex. For instance, specialists from the Computer Technology Institute, together with those from the Computer Enterprise and from the Central Institute for Management and Data Processing, assure the training of the chinese personnel in the use of Romanian computers. Consequently, Chinese specialists who are taking specialized courses can also always be found in Bucharest.

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ROMANIA

CONTRACTS CONCLUDED AT BUCHAREST INTERNATIONAL FAIR

Bucharest REVISTA ECONOMICA in Romanian No 44, 30 Oct 81 p 9

[Article by Nicolae Suciu, director of the Enterprise for Fairs and Expositions: "A Fruitful Result"]

[Text] On Friday, 23 October, the doors closed on the Seventh Bucharest International Fair, an important economic-commercial event hosted this fall in the capital city of Romania, an event that enjoyed a fruitful result.

The official opening was honored by the presence of comrade Nicolae Ceausescu, the secretary general of the Romanian Communist Party and president of the Socialist Republic of Romania, and other party and state leaders. His presence constitutes yet another proof of the country's president's interest and permanent care for the continuing economic-social development of Romania, for the expansion and furthering of foreign commercial relations and for the consolidation and broadening of economic collaboration with all the countries of the world in the spirit of mutual advantage, economic and social progress and the cause of peace.

The 1981 Bucharest International Fair [BIF] occasioned a synthetic and eloquent expression of the results acquired and significant progress obtained by Romania on multiple levels of its economic development, significant for the consistent continuation of the economic-social development of the country. It was an expression based on the prestigious results obtained by all the people to date in all the fields of activity, achievements accurately reflected by the Romanian exhibits.

The BIF, in its seventh edition, without a doubt constituted a broad and fertile framework for promoting trade and international economic cooperation, with Romanian industry exhibiting thousands of new products, some of which made their veritable industrial premieres. These products were made by approximately 400 production units, industrial centrals and research and design institutes in Romania, with many of these being included in the export lists of Romanian foreign trade enterprises, a shining example of the creative energies and abilities of Romanian specialists and producers.

Romania's export program, expressed in the stalls of 45 foreign trade enterprises, covered all the categories of products included in the current, expanded make up of the BIF. These products included: machinery, installations, equipment and devices as well as studies, designs and licenses for the field of metals processing, for

telecommunications and the electrotechny, electronics and automation industry, for the production, transportation, distribution and control of electrical energy, and for nuclear technology, the metallurgical industry, the mining industry, the petroleum and gas industry, agriculture and the food industry, forestry, the wood, furniture, cellulose and paper industry, light industry, the construction materials industry, highway, rail, sea and air transportation (including equipment and machinery), and the printing and packaging industry; equipment and materials for tourism, restaurants, hospitals and schools; commercial equipment, installations and devices for human and veterinary medicine, and for medical and educational laboratories and research and production laboratories; machinery, equipment and installations for the chemical industry, the pharmaceutical industry, the cosmetics industry and the rubber and plastics industry; and machinery and devices for measuring, controlling and supervising products and items in all the above fields and industrial and agro-food industry consumer goods, as well as the necessary raw materials for all these sectors. The Romanian exhibits were of special interest to the businessmen and specialists at the fair and were the object of numerous and important commercial contracts.

The over 800 foreign exhibitors presented the products of the 42 participating countries, using a total surface area of over 31,000 square meters. There were 34 official pavilions from the following countries: Algeria, England, Australia, Austria, Bangladesh, Belgium, Brazil, Bulgaria, Canada, Czechoslovakia, Cuba, Denmark, Switzerland, GDR, FRG, India, Jordan, Iraq, Iran, Israel, Italy, Yugoslavia, Japan, Kuwait, Libya, Morocco, Nigeria, Poland, Portugal, Syria, the United States, Sudan, Turkey, Hungary and the Soviet Union. The PLO also had an official pavilion.

In addition to the official participants, numerous other companies were also present, having stalls and collective or individual pavilions, from England, Austria, Belgium, Ivory Coast, Denmark, Switzerland, Finland, France, FRG, Greece, Japan, Holland, Singapore, Spain, the United States, Sweden, Hungary and so forth.

For the first time at the BIF, there was participation by companies from Australia, Canada, Ivory Coast, Jordan, Iran, Singapore and Syria. Similarly, for the first time there was separate stall for the UNCTAD/GATT International Trade Center, together with the Romanian Foreign Trade Center.

Along this same line of high technology, the use of the newest technological procedures and the adherence to the current demands of the international market, the displays by the foreign companies at BIF-81 confirmed the recognition that many of them enjoy on the world market. For example, I.C.I., Rank Xerox and Norprint from England, Rhone-Poulenc, L'Air Liquide, Michelin and L'Oreal from France, Hoechst, Merck and Tüfelin Mannes-Mann-Demag from the FRG, RAZNOEXPORT, AVTOEXPORT, TECHSNABEXPORT and STROJIMPORT from the Soviet Union, Montedison, Technomatic and Nuovo Pignone from Italy, MEDIMPEX from Hungary, TECHNOPOL from Czechoslovakia, Oerlikon from Switzerland and many others are, to a great degree, traditional participants in the expositions held in Bucharest and old trading partners of Romanian companies, with the others present for the first time wanting to enter the Romanian market and to directly know Romanian commercial offerings and cooperate with potential Romanian partners.

By carrying out its activities under these good auspices, the current edition of the Bucharest International Fair closed its doors having had fruitful results, as expressed in the conclusion of numerous import and export contracts in all the fields of the current BIF, thus effectively and directly contributing to the complete fulfillment of its purpose and the desires and interests of the participants.

The organizers, under the direct guidance and with the help of the Chamber of Commerce and Industry of the Socialist Republic of Romania, tried hard to offer all the means and experience accumulated to date in order to provide the participants an optimum framework for carrying out commercial activities under the best conditions, for concluding contracts and exchanges of specialized ideas and information and for completing transactions and concluding contracts. It should be mentioned that the current edition of the BIF attracted a record number of visitors - over 500,000, of which approximately 100,000 were Romanian specialists and foreign businessmen seeking to learn of the newest creations of the sectors of the Romanian economy present at the fair and of the foreign companies.

The preliminary data show that the value of the contracts concluded at this most recent edition of the fair is over 10 percent greater than the previous fair. I can mention that other contract negotiations are being carried out so that the results will continue to show up along the way. Among the principal contracts concluded by the Romanian foreign trade enterprises I can mention those regarding the export of utility vehicles to Italy and Cuba, trucks and dump trucks to Cuba, tractors to Yugoslavia, Egypt, Greece and Argentina, off-road vehicles to the PRC and Columbia, and bearings, petroleum equipment, and different types of machine-tools to the Soviet Union. Similarly, specialized Romanian enterprises will deliver furniture to Holland and the FRG and footwear to Syria, the Soviet Union and the FRG.

At the same time, during this period Romanian exporters completed contracts for building certain industrial projects and complex installations: in Egypt - a railcar repair factory; in Mozambique - a steel mill; and in India - a palletization installation. At the same time, different contracts were signed to import special laminated steel, machine-tools, bearings, spare parts for automobiles and so forth.

8724

CSO: 2700

ENERGY DEVELOPMENT PROGRAM VIEWED IN WORLD CONTEXT

Bucharest ERA SOCIALISTA in Romanian No 18, 20 Sep 81 pp 20-24

[Article by engineer Dr Calin Mihaileanu, director general of the Central Institute of Energy Research, engineer Dr Mihai Pop and engineer Marius Dancila: "Romania's Energy Program and the Trends of World Energy Consumption"]

[Text] The idea of comparing our own national policies, programs and plans for development with the trends that one comes across within the framework of certain broad scientific encounters is the first impulse of any participant in the worldwide exchange of ideas and information. Certainly, from these confrontations, depending on the premises, one can confirm or refute ideas and hypotheses that have been created directly or indirectly by all the workers and that can require mid-course corrections that are not always easy to effect. At the same time, this is, however, an important criterion for checking our own options. As a result, from a scientific, moral and social point of view the comparison of all points of view and general trends with our own ideas represents an obligation.

As is known, in Munich in September 1980 the 11th World Energy Conference was held under the banner "Energy for Our World" - a banner which represents an imperative for the contemporary era, an imperative for which very many states are still looking for an answer for the current generation and especially for the future generations. In this regard, the energy problem is for the first time being considered in its intimate interaction with the economic and social affairs of the planet.

Two years prior to this conference, under the direct guidance of comrade Nicolae Ceausescu we began in our country to elaborate the Program-Directive for research and development in the field of energy for the 1981-1990 period and the principal orientations until the year 2000. This programmatic document, approved by the 12th Congress of the party, has as its purpose the harmonious economic and social development of the country on the basis of our own energy and raw material resources while attaining, under these conditions, the level of a medium-developed industrial country by the middle of this decade.

As a general evaluation, one confirmed in the discussions carried out with the specialists present at the World Energy Conference, we can say that the systematic treatment of social, political, economic and energy elements is optimally expressed in our country's energy program, a program which serves to emphasize the farsightedness of

our party's policies and the superiority of the social system which can truly achieve - because of the socialist ownership of the means of production - a happy blending of the premises necessary for the harmonious concomitant development of the four previously mentioned vectors.

A Basic Objective: Ensuring the Country's Energy Independence

The Program-Directive for research and development in the field of energy for the 1981-1990 period and the principal orientations until the year 2000 establishes the fundamental tasks for the development of the raw material base and energy resources through the intensification of geological research, the discovery and use of the country's classical energy resources, the conservation of energy through the implementation of certain measures to continue to reduce the specific consumption of energy in all fields and sectors of activity, the rational management of fuels and energy and the introduction of new energy sources at a sustained rate.

The conservation of energy is valid as the most important source of energy that we currently have and, as such, is the first path of action for the coming decade. Furthermore, this fact is valid for all the countries having economies that have gone beyond the stage of extensive energy development. In Romania, the aspects of the conservation and saving of energy were dealt with in all fields and on all the levels of energy reviews, going as far as to initiate certain actions to establish, resolve and pursue the implementation of measures for the efficient use of energy. Certainly, the intervention of technological development is decisive in achieving the energy conservation policy. In this regard, the Directives of the 12th RCP Congress established the 1981-1990 decade as "the decade of science, technology, quality and efficiency" - inseparable premises for achieving the goals proposed in an evolving social and economic context.

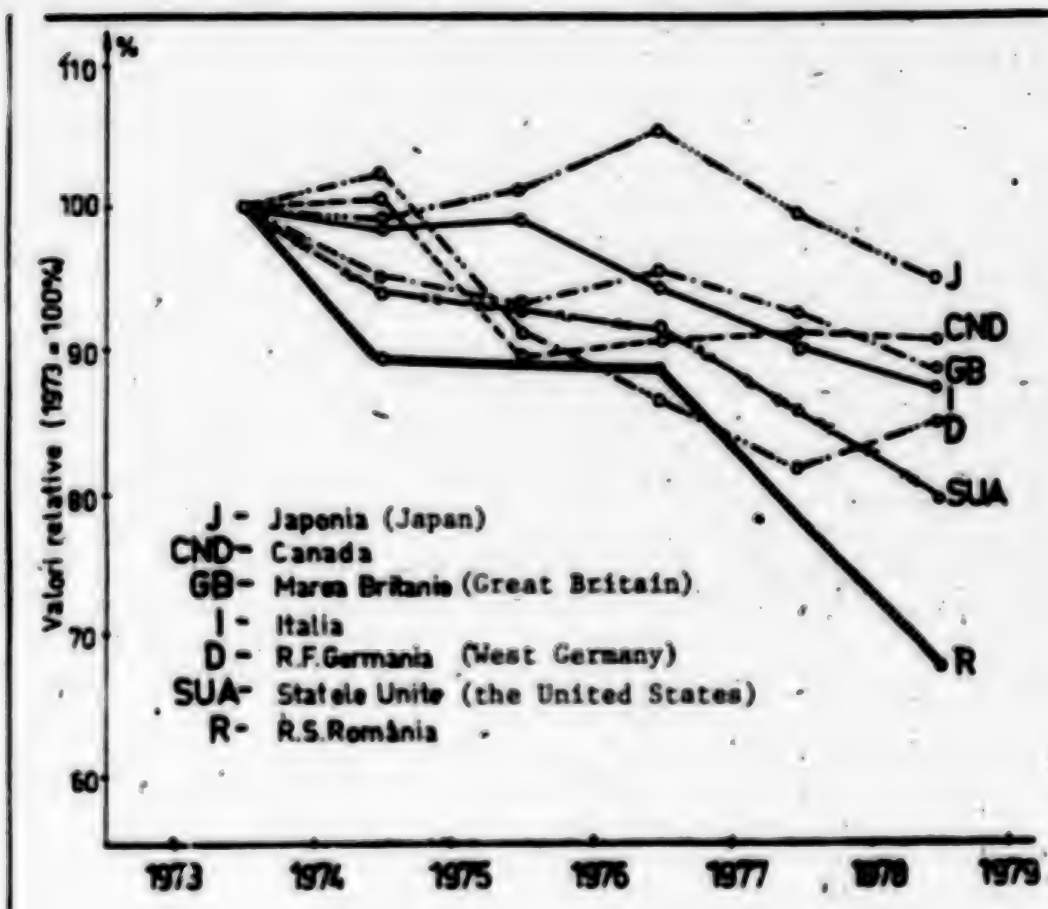
Generally, we can note that although the solutions for industrial modernization are known, as well as those necessary for the development of new, inexhaustible sources of energy, economic market reasons have kept the developed capitalist countries from being able to take more decisive steps along the path of energy conservation. A study by the International Energy Agency (IEA) referring to the six main developed capitalist countries points out that the so-called "coefficient of elasticity" (the relationship between the growth in energy consumption and the growth of the gross national income during the same timeframe), which had been over 1.0 until 1973, gradually fell in value to the level of 0.9 to 0.91 in 1978.¹ Graph No 1 shows the comparative evolution of this coefficient for the countries mentioned and Romania during the same timeframe.

As a socialist country, Romania, because of the planned, proportional nature of its economic and social development, has the material and human resources necessary for certain broad technological and structural transformations required by the current energy situation. Although from a technological point of view we are still behind the developed countries in some sectors of our economy, our organizational ability and the scale of the transformations in Romania coincide with the scope of the changes required by the process of going from a dependency upon the "monoculture

of hydrocarbons" towards the multiple values of a balanced structure of primary energy sources. This is reflected in the relatively more pronounced decline in the coefficient of elasticity in our country than in the industrially developed capitalist countries (see Graph No 2).

Graph No 1

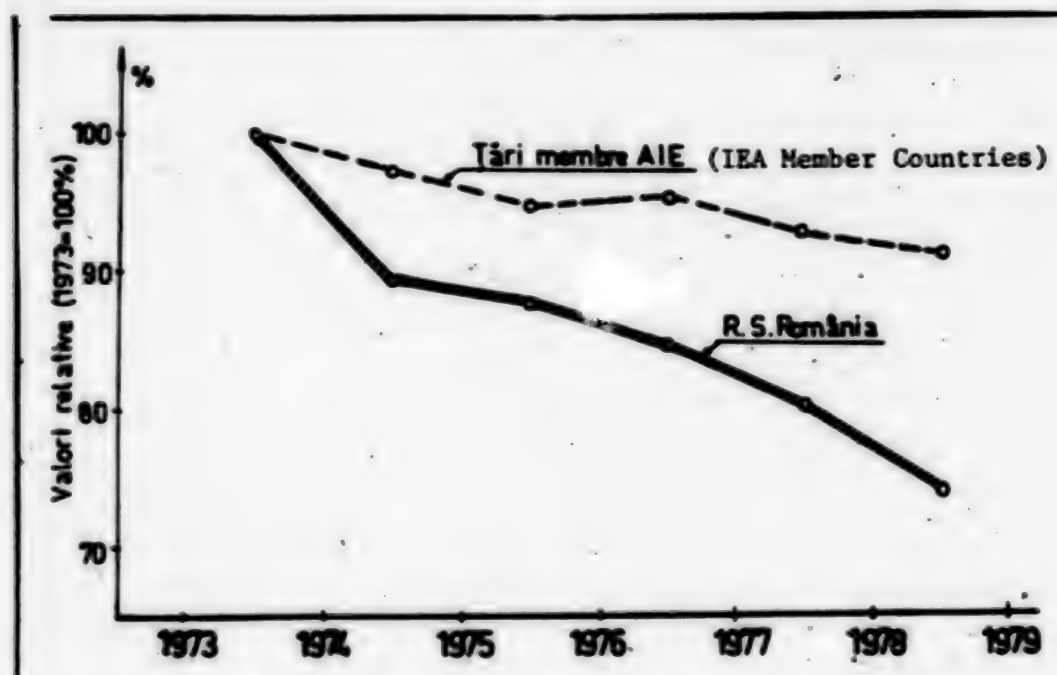
Variations in the Coefficient of Elasticity in the Six Main Member Countries of the IEA and Romania During the Period 1973-1978



The International Energy Agency report we mentioned points out that "there was a lack of credibility felt in the energy programs in many of the member countries, with this making their implementation more difficult. An attempt to give more attention to the national efforts to stimulate public understanding for the need to conserve energy was made during the international meeting of the representatives of the agency member countries in October 1979." The report recognizes that because of differences in interpreting the diverse socioeconomic climates some countries have placed the center of gravity of their conservation policies in the area of voluntary measures while others have used measures of a legislative nature. In any case, the price of energy was considered the key factor in conservation policies.

Graph No 2

Variations in the Coefficient of Elasticity in Industry for the Six Main Member Countries of the IEA and Romania During the Period 1973-1978



Despite all this, the point of view of the developing nations, well-illustrated by the OPEC report,² calls attention to the fact that "for such a vital product as petroleum we cannot leave things in absolute freedom. Economic growth and more exactly the growth of energy consumption must be continually modified. To this end, the principle energy-consuming developed countries must implement a more vigorous policy in the direction of: a) eliminating any forms of waste resulting from the irrational use of hydrocarbons; b) revising the structure of production for the purpose of eliminating current losses due to conversion, transportation and distribution of primary energy; c) integrating into the system other energy sources that can contribute to a balance."

In the current economic and political context, worldwide a continuing worsening of conditions is being felt with regards to access to the sources of raw and energy materials in the various regions of the world, combined with an aggravation of the stability of international relations.

Because of the continued increase in the per inhabitant consumption of energy in the powerfully developed industrialized countries, we have reached the paradoxical situation where just the per inhabitant increase in the consumption of petroleum in the United States during the period 1968 to 1978 was six times greater than the absolute value of the per inhabitant consumption in Africa and Asia, considered together, in 1978. According to OPEC's opinion, to which Romania as a developing nation

cannot but subscribe, the growth in the consumption of petroleum shows the following factors: "The consumption in many of the industrialized countries was much greater than the correct proportion that they should have from the world energy sources, and, secondly, all the important regions of the world still depend upon petroleum as a major source of energy." This once again stresses the correctness of the central idea of the energy development program in our country during the current decade - that of Romania achieving its energy independence. This idea, which is founded in a development based upon its own resources, intelligence and abilities, is gaining even more ground as the sole alternative to pursue in the achievement of the national independence and sovereignty of each country within the context of a multilateral balanced cooperation.

On the occasion of the World Energy Conference, it was proven that although the forecasts advanced by the industrialized countries and the international bodies show that in the future we will see a shift of the center of energy consumption from the developed countries towards the developing nations, during the 7 years since the opening of the oil crisis the energy consumption of the industrialized countries has continued to increase while the consumption of the majority of the developing nations has recorded only a relatively modest increase, despite the special financial efforts made by these nations to acquire certain energy raw materials, efforts that were sometimes beyond their capabilities. The situation was aggravated to the point where international banking organizations refused them credits for next year for certain energy development projects in these countries, with the sums being allocated to them serving to strictly maintain them at their current level of consumption. Thus, the developing nations will continue to remain tributaries to a technological model of thinking that is foreign to them, leaving open the problem of their finding their own means for attaining energy independence and economic development.

The achievement of energy independence is based upon two elements in the view of our party and state: the most diversified exploitation of the entire potential of classical resources concomitantly with the conservation of energy. The achievement of a balanced structure of primary energy resources in relationship with the current world energy situation will be helped during the next 10 years by the intensive development of coal extraction so that the percentage of lignite and combustible shale will increase in the structure of primary fuels for the production of electrical energy from 40 percent in 1980 to 55 percent in 1985.

Coal, The Main Element for Replacing Hydrocarbons

This drastic change, also emphasized by the size of the financial effort involved, the newness of the energy equipment produced entirely in-country and the severe problems of preserving the quality of the environment aroused numerous discussions during the period of completing the energy program. It is true that at that time the price of petroleum was only \$14 to \$16 per barrel, there was an estimate of a slow growth towards \$30 per barrel around 1985, and our imports of petroleum did not exceed seven million tons. To this we can add the fact that a series of electrical power stations were still new or very new, and our experience in the construction of thermo-energy equipment using inferior coals was still suffering from the problems of infancy. In this situation, the view of the energy program could appear, at that time,

to have been very daring. We were actually talking about changing in just a decade the structure of the primary energy resources that had been created by a development policy for the entire energy infrastructure dating back over 25 years.

The following 2 years were marked, however, by the exploitation of the known petroleum resources in the world at an ever more intense rate and by the failure to make discoveries at a rate appropriate to the level of consumption in other petroleum regions, as well as by a troubling instability among the ranks of the oil-producing Arab nations, which brought about a continuing limitation on the delivery of oil to the world markets concomitantly with a spectacular increase in the price of crude oil. At the World Energy Conference this caused coal to appear to be the principal sustainer of the worldwide growth in energy consumption and the main element for replacing hydrocarbons, suggesting the intensification of the rate of extraction and the diversification of the technological processes for using coal.

In this regard, the forecast of the World Bank³ seems suggestive regarding the growth of coal production in diverse large regions of the world, as shown by the table below:

Table No 1

The Outlook for Coal Production During the Period 1977 to 1990 (millions of tons of marketed coal)

	1977	1980	1985	1990	(1) Crestere anuală (%)	
					1977-1985	1985-1990
Țări occidentale industrializate (2)	1 134	1 265	1 476	1 752	3,3	3,5
Țări socialiste (3)	1 463	1 662	2 089	2 610	4,6	4,5
Țări în curs de dezvoltare (4)	137	233	304	440	7,1	7,6
TOTAL MONDIAL ⁽⁵⁾	2 774	3 160	3 869	4 802	4,2	4,4

Key:

- | | |
|-------------------------------------|-----------------------|
| 1. Annual Growth | 4. Developing Nations |
| 2. Western Industrialized Countries | 5. World Total |
| 3. Socialist Countries | |

For the next decade, it seems significant, therefore, to practically double the world coal production, with a special rate of growth taking place in the coal production of the developing nations, a level of production that will nearly triple by 1990. In accordance with this forecast, another report, quoting the opinions of the executive leadership of the International Energy Agency,⁴ points out that "the production of coal must be tripled by the end of this century if we want to cover the energy requirements for moderate economic growth." Thus, coal will constitute an important energy source principally for those countries that have their own reserves since the potential market for the international trade of coal will not be able to represent but a quarter of that for petroleum at the end of the century.

The development of world trade in coal will accentuate, first of all, the problem of transportation - at sea and on the land. It should be mentioned that of the approximate 200 million tons of marketed coal in 1975 more than half was transported across the oceans. If in the future the largest portion of coal exports will come from Australia, India, Canada, the Republic of South Africa, China or Columbia, the level of maritime transportation will be approximately 170 million tons in 1985 and 400 million tons in 2000. That is why this forecast must be correlated with the necessary actions with regards to the construction of certain new port and transloading installations, as well as railroad transportation networks from the unloading site to the consumption centers. Today, industrialized countries like the United States, Italy and even the USSR do not have a railroad transportation capacity that can carry the necessary future amounts of coal. For these reasons, the idea of using hydraulic means of transportation to move coal through pipelines is gaining ground.

In the effort to use larger quantities of coal and to obtain from them higher forms of energy, procedures are being developed to enrich coal, as well as to gasify and liquify coal. In reference to the reconsideration of coal as a raw material for gasification and liquification, we can state that mankind was not taken by surprise. It had resorted to these techniques during World War II, but as a result of the later development of relatively cheap technologies based on petroleum they were abandoned during the 1950's and 1960's. The return to these technologies is tied to the closing of the gap that was created over the last quarter of a century between these technologies and those stemming directly from hydrocarbons. Precisely for that reason, the industrially advanced countries immediately reacted in the direction of improving the extraction methods for coal a great depths using classical procedures, as well as improving coal extraction equipment for use on the surface and, especially, in the direction of experimenting with and spreading the use of certain modern methods of higher use.⁵

Romania's energy program is firmly based in the above-mentioned trends, foreseeing an approximately 250 percent increase in the total production of coal in 1985 compared to the 1978 level and a tripling in the extraction of lignite over the same period. Special attention will also be given to exploiting combustible shale, which by 1985 is to reach approximately 10 million tons, an amount necessary for the high-power thermo-electrical power stations currently being built. This is one of the highest rates of development in coal production in the world, with special efforts being necessary, as well as a great mobilization of manpower in order to achieve this within the planned timeframes.

The Complex and Correlated Use of Classical Sources and New Sources of Energy

The 11th World Energy Conference marked a more indistinct interest with regards to hydroelectrical projects, which contrasts with the achievements, plans and programs presented at the Bucharest World Energy Conference (1971). This can be explained, on one hand, by the lack of the capital necessary for such an investment project as a result of the extended world economic crisis and, on the other hand, by the end of projects in the main hydrographic basins in the industrially advanced countries.

The developing nations, which have large, insufficiently exploited hydro-energy reserves, do not currently have their own economic strength that will allow them to achieve such projects.

A separate note accompanied the positions of Norway,⁶ the USSR⁷ and Romania, which felt it was especially important to fully develop and manage the national hydro-energy potential through all the means available. In this regard, our country proposed making all the financial and human efforts necessary so as to use approximately 30 percent of the country's hydro-energy potential in 1980, to reach 45 percent in 1985 and 65 percent in 1990. This will be achieved by the continued management of the Danube and the interior rivers, as well as by implementing a broad program of micro-hydroelectrical power stations.

All the recent energy studies show that nuclear energy is necessarily becoming one of the basic components of future energy supply. In connection with this, a number of important aspects are taken into consideration: the third world's dependency upon the energy programs of the industrialized countries; the tendency of an increased use of electrical power in all the economic sectors as energy vectors in the industrialized countries; the opportunities for petroleum supply, which in the coming decades will depend more upon political factors than existing resources.

The feeling that nuclear energy is in a crisis of faith is not valid for all mankind. The CEMA member countries and France have ambitious long-term nuclear programs; Great Britain, Spain and Japan, for example, are ready to further their nuclear programs and numerous developing nations, such as Argentina, Brazil or South Korea, are firmly pursuing their nuclear programs. The future of nuclear energy depends upon the faith placed in it by responsible politicians, the safety and security of its use, the means permitting the attainment of the objectives of nuclear arms non-proliferation and the opportunities to convince public opinion of the fact that their current fears are unfounded.

In the area of nuclear safety and the placement of nuclear-electrical power stations, three questions seem to disturb public opinion: the effects of radioactive emissions upon health during the normal operation of nuclear power stations, involuntary emissions as a result of accidents and the removal, treatment and storage of radioactive wastes having a long half-life. It is necessary to reinforce the trust of non-specialists and the broad masses in general, offering them objective information on the technical possibilities, their economic impacts and the risks that could appear after the long-term use of nuclear-electrical power stations.

With regards to Romania, the construction of nuclear-electrical power stations occupies an important place within the framework of measures calling for an increase in the energy base, in addition to the intensification of the use of coal in the production of electrical and thermal energy and the better use of the hydroelectrical potential. By the end of the 1981-1985 five year plan, the first nuclear-electrical power station of 660 MW will begin operations, followed by others, so that Romania will have 3,960 MW installed in 1990 and approximately 10,500 MW by the end of this century.

For the future decades it is foreseen that the supply of energy from nuclear power throughout the world will continue to be provided, for the most part (90 per cent), by reactors operating on enriched uranium. At the same time, there will be an intensification and a concentration of technical and material efforts towards achieving fast breeder reactors (FBR) and high temperature reactors (HTR). The introduction of these types will lead to an important reduction in the consumption of natural uranium, which for its part is one of the planet's exhaustible energy resources.

With regards to the technologies for producing nuclear fuels, we should note the great efforts that are being made to obtain uranium having an enrichment level around 2.5 to 3 percent in facilities having a reduced level of consumption, in other words that is accessible to other countries besides the industrially developed countries. Actually, the existence to date of nuclear fuel enrichment facilities only in the very developed countries has created and developed a complicated system of nuclear relations and a dependency for those who receive enriched nuclear fuel upon those who possess such equipment. In this context, the development of reactors that operate on the basis of natural uranium (HWR reactors) is today the only path that permits the achievement of independence in the field of fuel supply for any country that has uranium resources. Our country has reserves of natural uranium, which makes it a logical option to develop HWR reactors in Romania within the context of ensuring a long-term energy independence.

For the developing nations, the problem of nuclear energy remains a still unresolved question, even if the outlook for increasing the installed nuclear-electrical capacity in these countries indicates the highest rates. Such a statement is based on the fact that there still are no small, unsophisticated nuclear-electrical installations using construction technologies that are accessible to these countries. The sole means of getting out of this impasse would be to rethink these technologies in order to make them adequate for the manpower and means available in the countries that are to use them. In this regard, Romania is to increase the degree of integration in the production of nuclear equipment so that by the second nuclear facility the Romanian industry's contribution will be larger and larger.

With regards to the new inexhaustible or renewable energy sources, first place is held by solar energy, whose most frequent current uses are in the area of the production of heat. In order to obtain electrical energy we have in mind either the thermodynamic route (solar energy-heat-mechanical energy-electrical energy) or the photovoltaic reaction for the direct conversion (solar energy-electrical energy). Currently, none of the models is competitive with the solutions for producing electrical energy using conventional means, a reason for which intensive research is being conducted for the purpose of raising the efficiency of both models.⁸

Among the other new sources, geothermal energy is currently the only competitive one with the classical solutions for producing electrical energy and heat, with its use being limited, however, to those geographical regions rich in this resource. With regards to the use of biomass, it is felt that within the geographic regions having a temperate climate this would be directed on a priority basis towards obtaining

synthetic fuels. Wave energy could be used conveniently in a technical-economic sense only in several regions of the globe where the characteristics of the dynamic conditions would permit an advantageous exploitation. On the other hand, wind power is accessible on a broad scale, with its intensive use being influenced only by the development of specific technologies.⁹

Generally, the dispersed nature of the new energy sources is stressed, as well as their reduced specific unified power, which favors the construction of certain projects for using low power output and the decentralized production of electrical energy or heat. With all the interest and hopes shown by mankind for the new energy sources, at the last World Energy Conference prudence was shown with regards to the future reserved for these sources. Although ever more important material and human efforts must be made in the research for new sources, it was felt that their contribution will become significant only towards the end of the century.

In connection with this, in Romania's energy program it is pointed out that special efforts are to be made with regards to the ever broader use of geothermal, solar, wind and biomass sources and that new technologies will stress the introduction of heat pumps for the use of waste heat independently of or together with the heat-producing networks. To date, solutions for using solar heat (using flat solar collectors or concentrators), geothermal waters, biogases and wind power have been implemented in over 400 projects in our country. The solar heating of household hot water is gaining more ground, with this solution being implemented in over 1,400 apartments in Timisoara, Constanta and other locations in five other counties in the country, with financial help coming from the budget. In Bucharest in 1981, we will finish the construction of over 1,000 apartments in the Baneasa region where there is no heating network and where this solution will be used.

With regards to the amount of fuel saved in 1985 as a result of the higher use of new energy sources, 22.5 percent will be in industry (processes for drying wood and ceramics, preheating, cooling, space heating and so forth), 24 percent in agriculture (drying, dehydrating, preserving foods, cleaning and so forth) and more than 50 percent in the household-buildings sector (especially for heating health-household water and partially for heating rooms).

Special attention will be given to the rapid improvement of technological solutions for the better use of new sources, as well as the introduction into series production of all the components necessary to increase the competitiveness of these sources. Under these conditions, Romania's energy program proposes that by 1990 the geothermal potential will be managed in the proportion of approximately 90 percent, the solar potential by 20 percent and wind power by 4 to 5 percent, with the observation that wind power will especially contribute to the production of electrical energy.

The 11th World Energy Conference placed stress in the area of international cooperation upon the commercial trade of primary fuels (natural gases and coal) between diverse countries or groups of countries, as well as upon the technical training of specialists from the developing nations and the export of advanced technologies

from the developed countries to the developing nations. We feel that this means of dealing with the problem of international cooperation is unsatisfactory because it does not start with the premise of ensuring on an equal basis the access of all the countries to energy resources and broad collaboration in the spirit of equality for the purpose of using these resources according to the needs of development of the different countries. A better example in this regard is the ties in the energy field between the countries of Eastern and Western Europe,¹⁰ where to date there are six distinct areas of cooperation: the exploration of petroleum, gas and coal reserves; refining technologies, including equipment and service operations; equipment and components for the transportation of energy products; petrochemical technologies; technologies for classical electrical and nuclear power stations; and scientific and technical cooperation.

With regards to Romania, where international cooperation has a separate chapter in its energy development program, it should be noted that currently we are giving technical assistance in the mining, geology and petroleum fields, as well as in other related sectors, on the basis of agreements concluded with dozens of developing nations. This takes place under conditions where we are witnessing in international affairs a deepening of the contradictions between countries and groups of countries and under conditions where the energy crisis has had negative consequences that are felt in all the countries of the world, including in Romania. Our country's means of dealing with the problem of international cooperation in the energy field represents an expression of Romania's consistent policy of actively collaborating with the socialist countries, the developing nations and all the countries of the world and of promoting certain new relations of equality and equity in international affairs.

Our treatment in this manner of the problem of energy resources and raw materials on a worldwide scale, beginning with the need for a judicious solution to the problems generated by the possession of these resources, the access to them and the satisfaction of all the countries' requirements for raw materials, is determined by the imperative of building a new international economic order and of having a broad cooperation of all the countries in satisfying the requirements and aspirations for progress of all mankind.

For Romania, a developing socialist nation whose rate of economic growth is among the highest in the world, the strategy for development established by the 12th Party Congress has a vital importance since it defines the path that must be followed to bring our country into the ranks of the developed countries in a relatively short period of time. The provisions of our energy program, compared to the forecasts prepared by specialists from around the world, as well as the results obtained to date in-country, demonstrate that in our country important steps are being taken to achieve the fundamental objective in the next decade: Romania's energy independence.

FOOTNOTES

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EXPERTS DISCUSS PROBLEM AREAS IN ANIMAL BREEDING SECTOR

Bucharest ERA SOCIALISTA in Romanian 20 Aug, 5 Sep 81

[Article by Mihai Mazanet]

[Part I, No 16, 20 Aug 81 pp 26-30]

[Text] In the intensive development of Romanian agriculture, zootechnics is and will continue to be a priority area. The requirement set by the party leadership for the share of animal production in coming years to represent 50 percent of overall agricultural production has deep social implications, particularly for providing a food consumption with high biological value as well as covering the greater and greater requirements of the various branches of industry.

Proceeding from the particularly important goals facing zootechnics in this five-year plan, it is necessary for the specialists in this area to give the greatest attention to complete utilization of the resources our country has available for developing animal production. At the current time, what are the most efficient ways to achieve an intensive and qualitative growth in zootechnical production? What reserves, still being used insufficiently, exist in this area and how can they be utilized? Such questions have been in the attention of the participants in the discussion entitled "Zootechnical Production, the Requirements for Intensive Development and Quality," organized by the editors in collaboration with the Academy of Agricultural and Silvic Sciences.

Participants in the discussion: Ion Moldovan, vice president of the Academy of Agricultural and Silvic Sciences; Dumitru Teaci, scientific secretary of the Academy of Agricultural and Silvic Sciences; academician Emil Negrutiu, of the Cluj-Napoca Agronomic Institute; Nicolae Oprea, director in the Department of State Agriculture; Petre Solyom, deputy general director in the General Directorate for Agriculture and the Food Industry in Mures County; Gheorghe Burlacu, scientific director of the Research Institute for Animal Nutrition; Florentin Cirpan, director of the Beregsau Hog-Raising Complex, Timis County.

Ion Moldovan: In the years of building socialism, agriculture in Romania has taken on a more and more intensive nature, while zootechnics has enjoyed special attention in the general process of making agriculture intensive, being a priority sector. This may be shown by several figures. In the last four decades, more exactly between 1938-1979, the value of total vegetable production has increased more than 2.2 times, while in the same period that of zootechnics has increased more than 3.7 times. The share of zootechnics in total agricultural production also has grown in time--from around 30 percent in 1938 to 45 percent in 1979. This development was sustained with greater and greater investment capital intended to extend the material base of zootechnics--approximately 12 billion lei in the 1966-1970 five-year plan, 21 billion in 1971-1975 and 23 billion in the 1976-1980 five-year plan, while more than 36 billion lei are forecast for this five-year plan.

I feel it necessary to stress that in the 1971-1980 decade zootechnical production reached the highest development rates in its entire history. This rapid growth was based on fulfilling the provisions in the national program for zootechnical development, compiled from the order and under the direct leadership of Comrade Nicolae Ceausescu, a program which, at the same time, establishes the contribution which other sectors in our country's economy must make, sectors involved in solving the main problems confronting zootechnical activity.

This policy of the priority development of zootechnics within the development of agricultural development is in full agreement with the needs of our economy. Zootechnics itself is a means for intensifying agricultural production, but only a growth in the share of animal production in agricultural production is not enough. Intensification of agricultural production as a whole, along with increasing the share of zootechnical production, at the same time requires intensification of production within the zootechnical sector.

At the world level, intensification of agricultural production is very clear. Thus, in the 1963-1979 period, while agricultural area rose approximately 1.7 percent, arable land rose 5.6 percent and irrigated crops rose 34.4 percent, grain production increased 57 percent. This trend also is found in the animal production sector. The number of animals rose around 22 percent for cattle, 14 percent for sheep, 43 percent for hogs and more than 56 percent for poultry, while meat production increased 65 percent, milk production--29 percent and eggs--62 percent. Thus, in the zootechnical sector, too, we see a process of continued intensification of production, aimed not only at increasing the number of animals but also increasing their productivity and slaughtering weight. What I would like to emphasize in particular is that while the number of cattle rose 22 percent and that of sheep rose 14 percent, the breeds such as hogs and poultry, with faster reproduction possibilities, rose 43 and 56 percent, respectively, with the goal of satisfying the population's food needs in a shorter time.

Our country's policy of development of agricultural production and zootechnical production is in agreement with this world trend. Taking the 1938-1980 period into account, in Romania, while cattle numbers rose 78 percent and sheep rose 55 percent, the number of hogs rose 318 percent and poultry--157 percent. In the same period, meat production rose 221 percent, milk production--191 percent, eggs--398 percent, while special increases also are recorded for wool--161 percent.

This trend also is being maintained for the program to develop animal raising in the 1981-1985 period in Romania. In this regard it is important that, while

it is being kept in mind that the number of cattle should increase 12.6 percent, hogs--30 percent, sheep--32.6 percent and poultry--20.3 percent, it is being forecast that meat production should increase 64.2 percent, milk--69.2 percent, wool--62.3 percent and eggs--28.1 percent. As such, the development of zootechnical production in coming years in Romania will have an intensive nature, with particularly high annual rates for production compared with the growth rate for number of animals.

Emil Negrutiu: Truly, we have unprecedented achievements in animal raising and it is forecast that a very fast development rate will continue compared with world trends. However, I figure that we should mention the different zonal contribution to these achievements as well as their share by categories of farms.

In the recent past, the population's farms represented a large share in zootechnical production of numbers of animals as well as production. This share also is being maintained today, particularly in the pre-mountain and mountain zones. On the territory where the Maramures Brown breed of cow is zoned (Maramures County and counties placed on the exterior Carpathian arc), the population's farms hold or use on the average 31 percent of the agricultural area, with variations up to 45 percent, while the average for the country as a whole is around 15 percent. Whereas the number of cattle (and other animals) held by the socialist units at the national level today represent around 60 percent and around 40 percent on the population's farms, in the zone mentioned this ratio is nearly equal, emphasizing that in certain counties such as Gorj and Maramures, 66 and 74 percent, respectively, of total animals are found on the population's farms. This aspect also is reflected in milk and meat production in the zones I have referred to. A similar situation also is presented zonally in the counties placed on the interior Carpathian arc, where the Romanian speckled cow is raised.

But there are great differences with clear particular features which exist between the counties from the two zones as well as between other counties, features due in good measure to the numerous influencing factors and specific conditions of the natural background. I have given these examples to show two aspects; first, the importance of the zonal nature of agricultural production in general and, implicitly, of zootechnical production and, second, the large share which the population's farms have and will continue to have, differentiated microzonally. I think that account should be taken of these elements in connection with the requirement for the intensive development of zootechnical production.

Gheorghe Burlacu: Of course, also posed is the much discussed problem of the nutritional needs or scientifically established needs for normal nourishment for the population. Whereas at the world level a level has been reached in providing food ration considered generally to be appropriate, there still are big differences between zones and countries. One also may evaluate that the participation in nourishment from the animal products is still small with regard to calories as well as animal protein.

Emil Negrutiu: The differences of the kind you are referring to also have been found between some counties in Romania with regard to meat, milk, egg and wool production as well as their per capita consumption. Thus, just in the zones where the Maramures Brown breed is raised, per capita milk production varies between counties, due to various factors, from 108 to 379 liters, which requires intercounty deliveries of these products to balance the population's consumption.

Ion Moldovan: Yet, from the viewpoint of animal protein consumption, we have recorded particular progress in recent years. Between 1963 and 1977, the increase was 18 percent for total consumption of protein, of which 58 percent was of animal origin. Yet the level attained is just 39 percent animal protein compared with total protein consumed. Precisely for that reason, through the continued powerful development of zootechnics, we are seeking to achieve not only an intensification of overall agricultural production but also satisfaction of the population's consumption needs to a greater extent and rise in the people's standard of living.

Nicolae Oprea: From the viewpoint of concentration, specialization and integration of zootechnical production, very great steps have been taken in Romania. For example, we have built animal breeding farms which have among the highest concentrations of animals in the world. Construction and technological solutions permit a powerful intensification of zootechnical production and emphasis on the industrial nature of this production. Yet there still are many elements which make the investments we have achieved not be used well enough. In frequent cases, the animal breeds we are raising in these units are not expressing their maximum production capacity. Generally, the productivity and labor efficiency in this sector can be improved a lot.

Florentin Cirpan: An important means of increasing labor productivity and increasing economic efficiency in the industrial complexes for hogs--a means which should be generalized--is modernization of raising and exploitation techniques through the application of the newest solutions. In this regard I should mention our combine's experiences, a unit in which, under conditions of reducing the physical effort, labor productivity has risen 5 times on the average due to the modernizations made and the operating and construction techniques are the factor with which our own specialists take action.

But--and I emphasize this fact--the concentration of animals in the complexes in itself is merely a condition for achieving production with high efficiency. It is necessary for the intensification of production to be the factor with which priority action is taken in this regard--by increasing labor productivity as well as by reducing the material expenses incurred, particularly by optimization of the fodder recipes, reducing specific consumption, standardization of the modernization designs according to the newest techniques.

Ion Moldovan: The process of industrialization of animal raising has meant that in the last 15 years zootechnical production in Romania has recorded particularly high growth rates compared with those achieved at the world level. The figures are graphic. For example, between 1963 and 1979 meat production in Romania rose 165 percent compared with 65 percent at the world level, milk production rose 57 percent compared with 29 percent, egg production--176 percent compared with 63 percent, wool--54 percent compared with just 2 percent, the world average. This places Romania among the countries with the highest development rate for animal production in the last 15-16 years. Yet the plan tasks have not been fulfilled, with great reserves remaining unused. At the same time, many shortcomings were seen in the activity of this department of agricultural production, shortcomings which must be eliminated by solving the problems raised.

Editor: What is the cause for failure to fulfill animal production at the level of the forecasts established?

Ion Moldovan: The failure to fulfill the plan tasks which zootechnical production had and failure to carry out the programs according to which activity was conducted in this

area also had at their base some difficulties along with the shortcomings in the work of the specialists concerned with animal raising, and there were many of them, difficulties among which I would mention that the main one has been failure in recent years to provide only for approximately 80-85 percent of the necessary fodder. The planned production of fodder per unit of area was not carried out, either, for the fodder specific to each breed of animal and the areas of land needed for the fodder crops were not provided, either. In any case, as a specialist, I feel that the lack of fodder is the basic problem which has affected the level of zootechnical production and, in general, the efficiency with which animal products are obtained.

Emil Negrutiu: This is the great truth and, in my opinion, is the "basic problem" in the failure to achieve zootechnical production as well as in the insufficient utilization of the genetic potential of the animal breeds or hybrids. For many years and year after year we have not had a balanced fodder balance in useful elements, quantitatively and qualitatively. On various occasions I have referred to these aspects in the past, too, and I also published an article in ERA SOCIALISTA in 1980. Now, as then, if we wish to approach the basic problem of zootechnics in our discussion, I propose that, above all, we examine the main aspects of the production, preparation, storage and administration of fodder. Because neither "breed" nor "home" (shelter and technological factors) is the main guilty party in the failures to achieve our zootechnical production, but "food" (nourishment) is. In this connection a change in view, in concept is needed.

Florentin Cirpan: I think that the nutritional aspects of the fodder should be borne in mind, too. In this regard, as far as corn--our basic fodder--is concerned, there are opportunities to increase its protein content. Increasing this content by 1 percent would lead to around a 10-percent increase in meat production, using the same quantity of fodder, together with improving the quality of the meat and using the energy of the combined fodder more economically. At the same time, the animal breeds we work with, through this, would have all the necessary conditions created in order to actually carry out production at the level of their production capacity. So, with relatively small material investments we could achieve a substantial increase in production, with special efficiency economically and with regard to the quality of production.

Dumitru Teaci: Really, providing the fodder in necessary quantities and of appropriate quality plays a particularly important and, I would say, decisive role for all zootechnical activity. However, in this connection, a number of problems are raised, problems for which appropriate solutions must be found. Taking into account the country's ecological resources, today we can produce approximately 100 million tons of dry substance for the lands as a whole which are not covered with asphalt or used for construction. Of this total, approximately 65 million tons are achieved in agriculture, with the remainder belonging to silviculture or being products which do not enter into the circuit of transformation as food for man or animals. It is very important that approximately 85 percent of this biological mass or phytomass, as we say, is intended to feed the animals and only 15 percent directly enters into human consumption in the form of grains, vegetables, wine and so forth.

So, from this viewpoint, it seems we have rather large resources to feed the animals. And if we would achieve the fertilization of the land as we know it must be done today, with the means we know, and if we used natural and mineral fertilizers appropriately as we produce them in Romania we could nearly double the quantity of dry substance. That is, we could exceed those 100 million tons by a lot, of which around one-third

is grain and the other two-thirds are non-grain products, industrial products, forage, reusable residue for food for animals, for example, grist.

But there also is another aspect. I could state that we are using photosynthesized products, that is, the so-called greenfodder in a proportion of only 55-60 percent, while the remainder is being lost because it remains ungathered in the fields and is not made available to the animals. Very much hay is not reaped and remains unused; also, many secondary products which represent food for the animals exist, but they are wasted because they are not utilized and preserved as they should be. As far as I am concerned, as a pedologist, I am happy that what the earth produces is returned to it, but this repayment can be made in a much more efficient way through the animals, at the same time obtaining meat, milk and so forth for human food.

Emil Negruțiu: The failure to harvest large areas of hay from the state ownership and from the communes' use to a large extent is due to the insufficient material incentives for the harvesters, in kind or in money. In the pre-mountain and mountain zones, the individual farms hold the most widespread areas of natural hayfields and these aspects are not seen there, but others are. In these zones, together with the exodus of the population to lower zones, the numbers of cattle and sheep are lower but, apparently paradoxically, the incentive to produce natural hay is rising, the hay utilized in the winter and spring at high prices and more easily than if they were used to raise the animals and obtain milk, meat, wool and so forth.

This type of eloquent example is found in the mountain counties, such as Maramures, Harghita, Hunedoara, Suceava and so forth, where, of total hayfield area, a very large share is held by the individual farms, farms where preservation of the hayfields, particularly the harvesting and preservation of the hay for their own needs and, in the end, for utilization, are a true "cult."

Editor: So the basic problem is that of producing more fodder but also of using the existing resources better and the fodder base we have available.

Ion Moldovan: We feel that zootechnics is a means for utilizing the production of the vegetable sector and, thus, actually is an industry for changing certain agricultural products into animal products. However, I would like to stress that, differing from the resources with which industry ordinarily changes various raw materials into products, the "animal machine" itself is a great consumer of raw materials. Above all, the animal consumes fodder and forage to live; it is what we call the "maintenance ration" which keeps it alive and is very high. Only what the animal consumes above the maintenance ration is changed into actual production--into meat, milk and other things. This surplus of forage and fodder, beyond the animals' physiological needs, is the "production ration."

Generally speaking, around 75 percent of the expenses in zootechnics is represented by expenses for the maintenance ration, care expenses, shelter, watering of the animals. But nothing is recovered by incurring just these expenses. What is decisive are the remaining 25 percent of the expenses, which represent the cost of the production ration, so only by ensuring this ration is it possible to recover all the expenses and achieve a gain. In other words, at least 4 lei are obtained with 1 lei invested in production ration.

Thus, it should be understood very well that if we do not ensure the production ration

in order to exploit the animals' production potential to maximum capacity, then zootechnics is changed from a source of profit into a source of losses.

Dumitru Teaci: Stating it graphically, it would be as if I filled the gas tank of the car, put it in the garage and let the motor run. The problems of environmental pollution also are stated in somewhat a similar manner.

Emil Negrutiu: And, yet, there still are many and frequent cases where not even the normal ration is ensured for maintaining vital functions, which causes an impermissibly large percentage of mortality and of slaughters. Also we are meeting rather many situations where, due to insufficient nourishment, quantitatively and qualitatively, during the winter period, the animals get so weak that their recovery to a normal physiological condition can only be achieved from spring up to the fall, with implications which are too well known in the reproduction and production process.

Gheorghe Burlacu: That is how it is and I feel that these are aspects we should discuss in depth in our discussion. Because, really, animal production is being achieved with a relatively low productivity, starting with vegetable production. This productivity varies between 3-5 percent, up to a maximum of 30 percent. From here we see that all those working in zootechnics must give the greatest attention to maintaining as high a level of efficiency as possible which, by its nature, is relatively low. Not more than 10-15 percent total productivity is obtained in the fattening of sheep and bulls. Only hogs are capable of giving a productivity of up to nearly 30 percent and milk cows with high productivity, that is, those with a daily production of 30-40 liters of milk.

Dumitru Teaci: Romania is extremely varied ecologically. As a result, by tradition as well as by the conclusions and recommendations of scientific research, certain types of diversified agriculture, according to the zone, have been organized. These types of agriculture cannot be mechanically transposed from one zone to another, particularly with regard to vegetable production, but--connected with it--also with regard to animal production.

Emil Negrutiu: The work of zoning agricultural production in many cases has been carried out forced in Romania, on the basis of plan indicators, which has damaged the achieving of parameters of normal production from a technical, social and economic viewpoint, particularly in the valley and pre-mountain zones. It is hard to understand why it is necessary in these zones to get agricultural products (with many compromises) through unsure crops or crops which are totally inefficient technically and economically. Is it not really cause for the national planning organs to take into account the recommendations resulting from scientific research?

Dumitru Teaci: It would be logical and efficient. Recently, as has been shown here, Romania has gone to a powerful intensification of zootechnics and its concentration in big industrial complexes. We were obligated to do this by the need to increase labor productivity and obtain as high an efficiency in this sector as possible.

However, some contradictions appear here. Production in agriculture is dispersed on the territory, not having a great density as in industry. Some 10 million tons of steel can be produced over a 10-hectare area, but it is far from possible to obtain the same quantity of grain. The concentration of agricultural production is achievable merely within certain limits. Because, above all, from the viewpoint of the overall entropy of the territory it is necessary to proceed so that the earth remains

productive for future generations, too. As a result, whereas a large quantity of vegetable mass is transported to a zootechnical complex to feed the animals, it is absolutely required that at least 30-40 percent of the nutritional substances be returned to the entire territory from which this vegetable mass was gathered. In the opposite case, the ground is spoiled, gradually impoverished, until it is exhausted.

But in this way, other aspects are raised. We must proceed so that very much energy is not spent to transport the fodder to the zootechnical complexes and then for the transport of the animal fertilizer from these complexes back to the field. Then the problem is raised of feeding the animals not only in the stables but also in the pastures. But how much for the stables and how much for the pastures? Proceeding from the need to save energy, the trend appears rational whereby the animals would be placed as much as possible to gather their food by themselves. But whereas in the past the achieving of irrigated pastures seemed to be an aberration, we see that, under current conditions, it is a truly efficient solution. Superintensive irrigated pastures can be created, where the animals would graze as long as our climate permits.

Emil Negrutiu: I agree, but from the research made right by your own collective, we clearly see that around 25 percent of the pasture areas are so destroyed that they need enormous investments and with unsure efficiency, investments which perhaps never would be recovered. The question has been and is being posed even today of whether these areas should not be withdrawn from agricultural circulation and given over to the forestry sector. These are beginnings, but very timid ones. I feel that this is how we should proceed, concentrating investments on a reduced area of hayfields, but with high technical and economic efficiency.

However, another aspect also should be brought out. The spectacular achievements achieved in raising the production of the natural hayfields by applying radical measures by the research units or specialized county offices have been carried out until now on insignificant areas. Practice proves that the improvement of all natural hayfields, particularly for the hilly and premountain zones, is a vital problem as well as that of their rational use.

Gheorghe Burlacu: A grazing animal expends more for his physiological needs, thus it needs 10-15-percent higher maintenance ration than a resting animal. In the case of highly productive animals, the grazing period should be more restricted, since they cannot assimilate the necessary quantity of food to satisfy all their needs. Of course, this does not mean that they should not be walked, precisely in order to avoid certain problems connected with their health and reproduction. But for the hilly and mountain zones, where it is relatively easy to obtain a daily increase in production of 600-700 grams for each cow being fattened, I feel that it is profitable for the animals to be kept under grazing conditions, however taking care that during the rainy time and during periods which are unfavorable for grazing there exist the opportunity to supplement their food from a stock. Because it happens that everything an animal has gained in weight during two weeks is lost in the next two-three days because it did not receive the maintenance ration necessary for it.

Dumitru Teaci: Both we and the world know that migration or moving of flocks of animals from one zone to another, depending on the season. This is an extensive system for raising animals and, of course, we cannot conceive of the intensification of

animal production using the features of extensive systems. But I believe that we must take some things into account. It is easier and, in any case, more economical for energy consumption to transport the animals to the source of food than food to the animals and then the garbage back to the field. Even here, in the hilly or mountain zone, if there is some poorer land with regard to the ability to produce fodder than the lands irrigated from the plains, yet in this zone there is a large, good-quality vegetable mass in the meadowlands and it could be utilized two-three times more efficiently directly in the field, through grazing. For that reason, I figure it is necessary that the concept of moving the flocks from one zone to another, of the animals' migration to the place where the fodder is produced should be reconsidered, achieving some stocks-warehouses of fodder, with semi-mobile sheltering of various categories of animals, by breeds, for maintenance and raising. This would facilitate the consumption of the vegetable mass where it is produced and the garbage would be left in place in order to avoid destruction of the soil.

Ion Moldovan: I feel that truly a major solution is maximum use of the natural meadowlands, but for this it is necessary for us to improve them, care for their regeneration, and provide the needed seed for this purpose. Generally a change in view is needed in connection with improvement of the meadowlands. Until now we have not been concerned with soil improvement where the meadows are in order to develop the production of graminaceae and leguminous plants. By regenerating a meadow without ensuring the appropriate soil conditions, the grass tends to return to what it was before in a short time. If the improvement projects are done solidly, then truly spectacular results are obtained.

For example, at the Salonta State Agricultural Enterprise, ordinarily 1,000-2,000 kg of grass per hectare was being obtained in May-June in 2-3 weeks on alkalized land; after that nothing grows until October. By applying some additions, by super-sowing and draining the land, production increased 5 times. Those in Salonta simply were able to have pastures for the grazing stage and hay. But, I repeat, we cannot raise the meadows' productivity merely with very simple resources.

Dumitru Teacă: With regard to using meadow resources, we should be very realistic. The 4.4 million hectares of pastures and hayfields in Romania are mainly marginal lands which could not be ploughed because they are inclined, hard to reach, they are lands with advanced salinization, with excess humidity and then there are the lands in the mountain and Alpine zones. Thus, these lands have fortuitously remained for pastures. It is precisely on these lands—which are "sick", the great majority of them—that the improvements must be applied. Also, when we speak of this great reserve of pastures, we must think of all the improvement resources, including investments. Since maximum productivity cannot be obtained without investments of work, materials, capital. And when the necessary expenses are incurred, the place actually changes. And we know that the pastures ensure the greatest productivity of changing fertilizers into agricultural products. A ton of meat can be obtained with a ton of fertilizer applied appropriately. But changing the productivity of the pastures is not possible only through simple measures of care. The production of seeds also is very important. And here we are very lacking. The production of seeds for the pastures was left way in the background.

Petre Solyom: Really, the expenses you referred to are necessary. Currently, the enterprises for pasture administration are being financed from the state budget. The reality is that the projects for complex improvement of a pasture area last 2-3 years and sometimes even 4, with 3,000-4,000 lei being spent for each hectare.

At this time, the pasture improves radically in productivity, efficiency, composition and so forth. After that the pasture is put into use by the agricultural production cooperation or producers' association, collecting an annual pasture tax of 75 lei for each animal.

In order to maintain pasture fertility the improvement projects must be repeated after 5-6 years. In Mures County there is a possibility for us to return to the same area about once every 10 years, with the condition that we also have the necessary material resources. Because these projects are exacting and need appropriate additions, seeds, equipment. So we cannot do much today with traditional, artisan resources and only with the aid of the village residents, Pioneers, UTC members.

Dumitru Teaci: If 75 lei per year is paid for pasturing one cow, taking into account that 2-3 cows are admissible on one hectare of pasture, we see that the enterprise for pasture management collects 300 lei from each hectare. Not one improvement technique, no matter how elementary, can be applied on one hectare of pasture by spending only 300 lei per year! The problem is that we must move from what is an ancestral practice in using pastures to the utilization of them as a means of production which directly affects the efficiency of animal raising.

Petre Solyom: In Mures County, having failed each time to intervene with improvement projects 5-6 years after certain pastures have been put into operation, large areas have become degraded with regard to productivity. We have tried to find some solutions which perhaps could be taken into consideration. For example, the Sighisoara State Agricultural Enterprise went with the idea of providing their own pastures. Intensive improvement projects were carried out on an area of 1,200 hectares of pasture from the DAIA [expansion unknown] with an average of 16,000 lei per hectare being invested and so they succeeded in solving the problem of maintaining the entire 1,900 young reproduction bulls. Working with specialized personnel, starting even with the head of the farm (who is a technician) and in a well-organized pasturing system, an average daily increase in weight of 620 grams per animal is being achieved.

On the other hand, we introduced a so-called "service system" in two enterprises for pasture administration. What does it consist of? These enterprises, concerned with the pastures, take over animals from some zootechnical units and provide for their maintenance on pastures from spring until fall. Depending on the weight gain of the animals throughout the entire grazing period, the zootechnical units pay the pasture enterprises around 10 lei for each kilogram.

Editor: Has this system you have experimented with proven to be efficient and is it working well now?

Petre Solyom: This is exactly what I wanted to say: this system does not operate too well, because some of the zootechnical units which could benefit from it have a small number of animals, while others do not have the money to pay for maintenance of the animals. In this situation we are going through a strange period, I would say. For us, in the conditions of Transylvania, where we have immense pastures but, of course, also for other zones, the maintenance of the pastures and appropriate organization of pasturing activities are basic to the continued development of animal production.

[Text] Dumitru Teaci: Approximately two-thirds of existing pastures belong to the state, while the rest belong to the agricultural production cooperation, the animal-raising associations, the private sector and so forth. By tradition, pastures here--and not only here--were used in the past according to need by just anybody, like the water and air are used, and then they were divided by communes and communities. For the most part we inherited this system through the pastures which are the property of the people's councils and which continue to be used somewhat as a natural commodity, more or less freely. But under today's conditions, it is necessary for all the pastures to be used with maximum productivity and as rationally as possible. In my opinion, this is a problem of structure, of organization, a problem of attitude toward such an important wealth of the country and one which should enter into a number of well-established economic relations in relationship with the other sectors of agriculture, with the entire economy.

Petru Solyom: I think that the following is the conclusion which results: there should be somebody who would have the entire responsibility for the best maintenance and utilization of the pastures. Precisely for that reason I feel there is a need for greater attention to be given to the enterprises which manage the pastures and their appropriate organization. In my opinion, there should be more of these enterprises and they should not be financed from the state budget but should be changed into economic units operating on the basis of their own administration, eventually adopting a "service" kind of system similar to the one we experimented with. In this way, taking over the care of large numbers of animals in the May-October period, under pasture conditions, the activity of the zootechnical units would be reduced a lot and the overall productivity would be much higher. I am convinced that under Romania's conditions irrational pasturing may lead to a 40-percent loss in the resources of vegetable nourishment we have available.

Emil Negrutiu: Proceeding from the results of research and practice in organizing the administration and improvement of the pastures, I am in full agreement with Comrade director Solyom. I see as one of the welcomed solutions for the zones with spread-out areas of pastures on the state's property and which today are being operated inefficiently that specialized enterprises should be established to operate on the basis of self-management and supplied and set up appropriately. In accordance with local conditions and needs, the utilization of the grass on these pastures could be carried out either directly with the animals, collecting taxes on the product achieved, or by harvesting the fodder prepared and delivered as hay. I feel that the organization of such specialized enterprises and having their own administration would eliminate at the same time one of the great defects which is frequently encountered by beneficiaries of the pastures improved by the county offices and that is that these beneficiaries have fully proven that they are succeeding in a very short period of time in bringing the pastures they use into a state of damage.

Gheorghe Burlacu: Since in our discussion we are dwelling on the fodder base--and I think that is natural--I want to pick up the idea presented by Comrade vice president Moldovan; that is, that the greatest portion of the cost of the animal product is represented by fodder. Really, between 65-70 percent of the cost goes for forage and from here we also have the importance which should be given to this truly basic element for zootechnics.

According to the program established for this five-year plan, achieving a continually increasing quantity of fodder is forecast—from 47 billion production units in 1981 to more than 54 billion in 1985. With regard to the overall structure of this quantity of fodder, ensuring concentrated forage in the proportion of 35 percent in 1981 and 37 percent in 1985 is being kept in mind. I am sure that with this fodder base the planned animal production can be achieved. It would be necessary for the percentage of concentrated forage to increase for an even greater production. But, from my viewpoint, the basic problem is not so much that of the concentrated forage but, in particular, that of the quality of the volume fodder (that is, the fodder crops from arable area, natural hayfields, successive crops, coarse fodder and so forth). Because it is one thing to produce volume fodder which represents .5-.6 nutritional units per kilogram, as usually occurs in Romania, and it is another thing to obtain this fodder with a nutritional value of .8-.9 per kilogram, as is being done in the countries with advanced agriculture. For example, not long ago I was part of a delegation sent to the GDR precisely to study certain of the aspects connected with the production and utilization of forage. In this country, volume fodder is being obtained with a nutritional value of .7-.9 nutritional units per kilogram. This means that it can be used for the chewing cows competitively with concentrated forage.

Editor: Why do we not reach this value in Romania for this quality of forage?

Gheorghe Burlacu: A first reason lies in the fact that green volume forage is not being exploited at its best point. This best point is at the earing in the case of graminaceae or at the start of budding when we are speaking of leguminous crops. In order to obtain the largest possible quantity of grass, this forage is harvested when it actually has exceeded its optimum nutritional value. Since, generally, the evaluation of fodder production is done in Romania not depending on the nutritional value of the fodder obtained but according to the quantity of green fodder produced.

I would like to make a sidenote, still referring to the GDR's experience. In this country, the evaluation of fodder production obtained throughout the territory is estimated not only as dry substance but also as nutritional value and price corrections are made for the forage producers in various zones depending on its quality. They have a scale of values for green forage expressed in five categories. The one producing fodder of quality I receives a 15-percent bonus, while up to 30 percent is withheld from the price for the one producing fodder of quality V. Through this system they have succeeded in improving the quality of green forage very much.

Nicolae Oprea: A somewhat similar system is to be applied in Romania, also, with regard to evaluating fodder production, particularly volume forage, all over the country as well as with regard to differentiated payment depending on their quality.

Florentin Cirpan: Of course, the quantitative and qualitative aspect of the fodder which the zootechnical units have available is particularly important, but another decisive factor, with major share in animal production, also should be taken into consideration and that is technological discipline. In my opinion, technological discipline really is a component of the production force, particularly in the industrial complexes, for all breeds of animals.

One may specifically argue this fact through the various consumptions achieved in some of the hog complexes which have available biological material and identical fodder recipes. While consumption--taken totally--in these complexes is 4,600 kg of combined

fodder per ton of pork, in other units this consumption rises to 6,400-6,600 kg of combined fodder per ton of meat. It is precisely the lack of technological discipline which is an important cause of the inappropriate efficiency in some of the agricultural enterprises.

Coming back to the quality of the fodder, I feel that the losses in quality which occur during harvesting and their storage are a very serious problem rising under the conditions of reducing total consumption of conventional fuel.

Gheorghe Burlacu: I am coming back to the problem posed in connection with the poor quality of volume forage. Generally, any method for preserving the fodder, either through silos or through drying (like hay) leads to a very large reduction in their nutritional value--between 20-30 percent. Unfortunately, this loss, which is enormous if we put it into ratio with the entire quantity of forage produced, is not taken into consideration too much. The percentages of loss I have referred to are, I think, the best argument for generalizing as much as possible the use of green forage in feeding the chewing cows, so that the animals can be kept as much as possible in the pastures or be fed with green forage brought to the barns, depending on the possibilities and the needs.

In the siloing of forage the preparation techniques must be respected precisely because only in this way are the nutritional qualities preserved, of course with the losses I have spoken of. For example, corn for siloing must be chopped at 6-8 mm so that the kernel can be sectioned, too, which guarantees the quality of the siloing. But we are not succeeding in doing this. First, we are not succeeding in preparing the volume forage for siloing in such a way as to be able to preserve it under the best conditions. Second, we are not succeeding in filling the silos at the best time, within two, three or four days at the most; rather, especially in the case of the big silos the operations last more than two-three weeks, with very high risks of fermentation processes appearing and damage of the forage. Under such conditions, it is not an accident that the siloed forage we are producing has a low nutritional value and sometimes also contains toxic elements which may lead to all kinds of disturbances in reproduction and the health of the animals.

Nicolae Oprea: A diversified range of machinery must exist and be used rationally to harvest the fodder during the optimum period and silo it appropriately. Since only in this way can great efficiency of the work and high productivity be ensured. In the contrary case, the harvesting is not done on time or the work is done with improvised methods and low efficiency. These are problems which we must keep in mind and which depend on us to resolve them along the way.

Emil Negrutiu: I believe we have waited too long for the designers and industry to produce the machinery and necessary equipment of good quality for the fodder crops and pastures, in accordance with the natural setting and, in general, the requirements for mechanization in zootechnics.

Nicolae Oprea: However, I would like to raise yet another aspect connected with the best possible utilization of the material base of zootechnics, fodder resources and in general the growth potential of the animals we have. As Comrade vice president Moldovan has shown, we have placed a special emphasis on development of hog and poultry raising, of course, in a fully justified manner, because they are the breeds which reproduce in the shortest time. But actually the cow and sheep are the most valuable breeds in zootechnics. However, we have been less concerned with them. With regard

to conditions in Romania compared with conditions in other European countries, they are much more favorable for raising and utilizing these two breeds.

Ion Moldovan: Really, we see from the data we have presented that in order to ensure meat and egg production, the hog and poultry breeds have been developed on a priority basis, in agreement with the world trends in the last 15 years. Bearing in mind that Romania is the fourth corn-producing country in the world, I feel that this trend was completely appropriate and was scientifically well substantiated. On the basis of it we have succeeded in increasing meat and egg production a lot in a relatively short time. We have reached a production of around 75 kg of meat on the carcass per capita in Romania, a production which is close to that of the countries with developed zootechnics. As such, we also have reserves for export under the conditions of a scientifically established consumption.

However, I would like to stress a special orientation which comes in the 1981-1985 five-year plan. Whereas until now the growth in meat production in Romania mainly has been based on faster rate of development of the hog and poultry breeds, the five-year plan we have entered as well as the next one forecast that meat production will be carried out by better exploitation of the production potential of the two cud-chewing breeds--cattle and sheep. The following figures are graphic in this regard: While meat production overall is to increase around 64 percent in the current five-year plan, with this being the highest rate in the last 15 years, the increase for beef is forecast to be 87 percent, for mutton--also 87 percent (compared with around 14 percent achieved for both products in the prior five-year plan). As a result, completely special increases are being kept in mind, which also requires a basic change in the action of production and use of the fodder specific to these categories of animals.

Gheorghe Burlacu: Nearly doubling meat production in one five-year plan means achieving annual rates of nearly 20 percent, with great implications for the balance of meat for domestic consumption and for export. However, for this we need a change in the view of our specialists who, I would say, are promoting an anachronistic behavior compared with world trends in animal raising. In Romania, the cattle are fattened with increases which barely reach 500-600 grams, compared with the 1-1.5 kg which the genetic potential of the breeds we are promoting permits. Cattle in the world are raised in particular for meat production. Generally we have mixed breeds, with an equal potential for meat production and for milk, but we are exploiting the potential of these breeds for meat production in a totally insufficient way. The concept that fattening must be done with fodder rations which ensure merely increases of 500-600 grams has found its place.

Ion Moldovan: As such the problem of producing fodder for the cud-chewers is particularly acute. And I figure that it is good for us to dwell on these aspects of ensuring the fodder base in our discussion, seeking to discover what exactly should be done in the future. In this connection, I endorse the opinion held earlier by Comrade director Burlacu, that with regard to fodder production and utilization of it we must proceed from the scientific structure of the ration of forage, however not expressed in variety components but in nutritional needs, that is, in calories, proteins, vitamins and so forth, just as in human nourishment. The scientific concept of planning should be promoted on such a basis, and then that of evaluating the production of meat or other animal products not only according to the quantity of forage given to the animals but also depending on a certain zone or certain microclimate, depending on certain soil conditions and crops which can be planted in it. Going

further, I would propose an even more advanced planning system, that is, that meat, milk, wool production should be in proportion to the unit of area depending on the zone. This would permit other ratios of structure to be established between the fodder crops specific to various zones, would promote other thinking in the area of differentiated growth of animal breeds on certain structures of microclimate, including the soil.

I feel that the current situation is anachronistic, one in which what exact fodder may be used and what exact fodder may not be used are imposed on the animal fattening farms through the structure of the forage rations established for the animals, not taking into account the zone they are in. Utilizing the area affected for the fodder base in a differentiated way and with maximum efficiency, it is possible to obtain 2 and even 3 tons of meat from each hectare.

Dumitru Teaci: Vegetable production which can provide for obtaining 2.2 tons of meat and around 300 kg of wool per hectare are being obtained at the Research Institute for Sheep at Palas-Constanta.

Ion Moldovan: This is the concept which should guide the thinking and activity of the specialized and planning cadres in zootechnics in order to fulfill the forecasts of this five-year plan for animal production.

Emil Negrutiu: I am in perfect agreement with you on the concept of the scientific establishment of rations as well as the planning system expressed by product and put in proportion to the unit of area, because, in both cases, a more realistic methodology can be achieved in zoning agricultural and zootechnical production. But there are differences between counties and even between units even within the same zone, such as, for example, the one bounded by the boundaries for raising the Maramures Brown breed, with a "microzonal" nature being demonstrated, one which actually substantiates the overall zoning. Thus, in the zone I have referred to, meat production per 100 hectares of agricultural area varies in various counties between 2.90 and 7.90 liveweight tons for cattle, while milk production per hectare of agricultural area varies from 206 to 631 liters, also. Proceeding from such results, basically modest, and analyzing the influencing factors more carefully, we can achieve a more rational zoning and planning for animal production.

Nicolae Oprea: Currently, of the 3.3 million cows we have in Romania, 1.7 million are on the population's farms. We have not been concerned with these farms enough, with there being place here for growing many more parallel with the development of the socialist sector of animal raising. Clearly, here there is a need to provide the volume fodder quantitatively as well as qualitatively. Currently, through the average production we are obtaining, we cannot provide the necessary quantity and quality of fodder on the area cultivated. Calculating the cow in units, we would need around 1.5 million hectares cultivated with fodder. Under the conditions where this area cannot be provided, the rations of feed are compensated with coarse fodder, with waste resulting from poultry raising and so forth. But, of course, the effects are much different if the animal eats mainly grass or if it eats straw, stalks and other subproducts.

Ion Moldovan: It is planned that in the 1982-1985 period the area cultivated with fodder should increase to nearly 1.2 million hectares. I feel that this area will be entirely enough, which will require greater efforts to provide the necessary

by increasing fodder production per unit of area and to have appropriate supply for the units so that they can harvest all the fodder on time and preserve it in a form which ensures the highest nutritional value.

Nicolae Oprea: There are large reserves for providing the fodder by having the most efficient possible utilization of the hayfields and pastures and by increasing average per hectare production, as has been pointed out earlier. But we must bear in mind that there are other ways of providing the necessary volume fodder for cud-chewers. For example, if only 500 additional kilograms per hectare could be obtained on the approximately 6 million hectares on which we sow grains, then nearly 800,000 hectares would then become available, on which fodder could be cultivated. Obtaining an additional 500 kg of barley or grain per hectare depends on a number of technological elements which we know very well--utilization of fertilizers, pesticides, seeds from the valuable soil and so forth--but which are not being applied appropriately.

Dumitru Teaci: But corn, too, should be cultivated where it can be cultivated, where they know that it will give good production, and not just on any land!

Petre Solyom: As far as I am concerned, I could say that I am professionally inclined toward cows for many reasons. I work on a county where, above all, one talks of cows when discussing zootechnics. Second, I come from a peasant family who was concerned with raising cows. Third, because, in my opinion, cattle--although it is a breed which has been left in the background until now, despite all the investments made--should have the greatest future due mainly to the quality of the products they provide.

Gheorghe Burlacu: Not to mention the fact that, differing from hogs and poultry which consume corn and grains, cattle do not compete directly with man for a number of basic food products.

Petre Solyom: I shall not return to the problems of fodder but I do want to refer to the cattle-raising techniques. Discussing and judging with specialist colleagues about how we could continue to develop our activity, we have reached a kind of impasse.

Editor: What kind of impasse?

Petre Solyom: This kind. Beginning in the 50's when we started to fulfill the first national plan for development of zootechnics and animal production, what was achieved was good. New technologies were introduced, complexes were created for intensive animal raising, obtaining very large production. In our county we have this kind of unit, for 5,000 head of cattle, which has produced record meat production. Very much was produced under conditions in which there was precise respect for the technologies established. However, what is happening now? The technologies I am speaking of and which really are the technologies for intensive zootechnical production were worked out and introduced into practice before the start of the energy crisis. These technologies are large energy consumers. Let us think only how much energy is spent transporting fodder from the field to the big zootechnical complexes or the barn waste back to the field. Since, as Comrade secretary Teaci was saying, if you do not give back to the earth what it has produced, you weaken it, degrade it.

It should be very clear that what was done until now was done well, despite all the shortcomings which existed. But it also should be just as clearly understood that

if these kinds of technologies which we adopted cannot be applied from here on-- I am convinced that it cannot be applied fully due to the energy crisis--then we must find other solutions. And these new technological solutions for cattle also should have the nature of intensive production. Making production extensive even under grazing conditions does not mean intensive production. The small individual farms, where the animals have begun to be foddered recently, but without a sufficient material base existing, are not achieving intensive production. There still are great opportunities which could be put to good use. Scientific research should be concerned more closely with these problems of intensifying zootechnical production at various dimensions, that is, with large concentrations of animals, small concentrations and even under conditions on the individual farms, taking into account the limitations imposed by the energy crisis.

Editor: It also is forecast that around 30 percent of the increase in animal production in this five-year plan, particularly for meat, should be achieved on the basis of resources existing on the individual farms.

Petre Solyom: My opinion is that this forecast can be fulfilled completely. With one condition, however, and that is that the farms for animal raising should be given incentives to carry out this work, in other words, that the ones dedicating themselves to this activity should be able to live from it, should be able to earn appropriately. Because animal raising is hard and it is not realistic to believe that someone is going to keep one, two or three cows just from conviction and just understanding that it is necessary so that he, too, has products and contributes for the needs of others, but he will also do additional to support himself.

Beginning in 1968 and up to 1980, milk production on the individual farms in Mures County rose from 120,000 hectoliters to 420,000, with 1,120 liters of cow milk returning to the state fund. But last year the quantity of milk from the individual producers began to fall. Why? Because cows are not being kept on more and more farms in the villages. The producers see, they discuss that so-and-so gave up his cow, that so-and-so did the same and then one and then another follow the example. So a phenomenon has appeared, a trend which is food for thought. They are aspects which must be counteracted by using truly effective methods for this purpose. In my opinion, as I was saying earlier, the solution should be for the individual producers to be given incentives to raise animals. However, this cannot be done by bureaucratic measures. For example, we were told to plan that a cow should be required to be raised on the village farms which have land. But it is totally unprofitable to raise just one cow and it is in no way justifiable for the work which is done and the expenses incurred; it is a clearcut loss for the farmer.

Nicolae Oprea: Going through the villages, you see many barns on the farms which are empty or are being used to raise rabbits or nutria, where they keep their bicycles or are changed into garages. Really, I also feel that there cannot be appropriate development of animal raising on the individual farms without more sustained incentives for the producers. For example, in Hunedoara County, there are around 1,700 groups of dispersed pastures (between .5 and 3 hectares) which are not being utilized rationally in the state agricultural units alone.

Petre Solyom: Zootechnical production generally today is being confronted with technological obstacles, as I was saying, due to the energy crisis. But we also have difficulties due to the heavyhanded way in which work is done. There still is too

much bureaucracy. For example, in our county we must give operative reports three times a week. Instead of following up on the spot how production is going, what problems are rising, how they are being solved, a lot of work is done to draw up situations, tables and so forth. Sometimes you have the impression that the figures, the papers we produce are of more interest than the actual production of meat, milk and eggs achieved.

In my opinion, more room should be made for showing initiative and the organizational ability of those who know the local conditions best and have the necessary experience. I have held agrozootechnical courses, on my own responsibility, on the village farms in several communes in order to provide an impetus for animal production. I showed how cows should be raised, presenting slides with construction and technological solutions, I spoke about how small farmers in Bavaria, in Austria, work. After that two farmers came to me and said that they would like to raise cows but they did not have anything to feed them. They thought a while and then decided to invest money. Really, they strove and succeeded in providing the necessary supply, they even built a silo, I helped them get triphase electric current. Today one of them has 12 cows and he makes a living from them. Last year he gave 35,000 liters of milk to the state fund and 2,200 kg of beef and also contracted two hogs, because the mayor said he would not give him pasture if he did not raise hogs. Now, another three appeared and at the beginning they did not believe it, but now they are convinced that they can do something good and they want to follow the example of the first two.

Florentin Cirpan: Undoubtedly, there still are big reserves on the populations' farms, but I cannot be in complete agreement with Comrade director Solyom, since intensification of production on the peasant farms does not mean giving up energy and on the contrary means increasing energy consumption per unit of product for the national economy as a whole--of course, if the problem of modernizing these small farms are left to chance. On the big zootechnical complexes and the industrial production complexes, the modernizations made in recent years also have meant reducing energy consumption by adopting very economical solutions, such as natural ventilation through large shutters operated mechanically and centralized, hydraulic evacuation of waste on a water-pillow and so forth.

As a result, I say we should not wait for progress on the population's farms to be achieved somehow by itself and unilaterally, but this progress must be provided an impetus and introduced by proceeding from the good experience of our industrial zootechnical units, comparable and even superior experience, from certain viewpoints, to that which is more advanced in the world right now.

Nicolae Oprea: There are very large reserves in the sector of the population's farms. Precisely for that reason it is important for the good results which some producers are obtaining to be known as broadly as possible, to be popularized and demonstrated concretely. Why am I saying this? Because the people are somewhat restrained as a result of the fact that some measures taken in the past to provide incentives for agrozootechnical production were not carried out as had been forecast initially. The producers must be convinced through the example of others of the advantages offered them by raising animals.

Petre Solyom: I would like to tell you that good results do not have to be awaited too much if there is faith in people, if they are given incentives to demonstrate

their potential for thought and ability to act, if they are encouraged and given incentives accordingly, then things must be well thought out and understood well in all their complexity. In the contrary case, some lacks of correlation, so that I do not have to say strange occurrences, may appear.

For example, there are a number of provisions for the development and incentives for work at home and a payment schedule is established for raising poultry. If I were not afraid that tomorrow or the day after tomorrow someone would come and accuse me of obtaining illegal incomes, I would drop my job and start raising chickens. Because I have the opportunity—it is written black on white—to produce 10,000 chicks without too much effort under the conditions in which I have at my disposal the necessary technology, which means that in 52 days I would honestly earn 30,000 lei, figuring 3 lei per chick as clear income. However, at the same time, a producer who raises five steerlings with a much greater effort cannot earn more than 1,000-2,000 lei per month.

Emil Negruitu: Improvement in the forms of material incentives, with priority for the ones which aim at relations between the cooperatives and cooperative members but also individual growers in the mountain zone would be needed to promote animal raising not only in the socialist units but also on the population's farms, as was discussed here, along with well-integrated agroindustrial rural development through concrete and efficient measures. Proven productive initiatives coming from the production units or from the village farms can be promoted faithfully and with courage on mutually advantageous bases. With regard to the status of caretakers, cow-milkers and sheep-milkers, I think it would be necessary for their activity to fit into the category of hard labor. Because these zootechnical workers, the great majority of them, "do not have day or night or holidays" and they do difficult and responsible work.

Gheorghe Burlacu: In some cases we have awakened to find units without milkers, without caretakers, because it was not convenient for them to stay and they left to work in other areas.

Dumitru Teaciu: What really is the sociomoral status of an animal caretaker? Somehow have we not remained followers of a past mentality when the very notion of a "cowherd" had a pejorative meaning, disconsideration of the miserable peasant, an illiterate seen from the position of the bovar or the industrialist? Currently work in the zootechnical complexes has a specific nature close to the industrial, while some of the workers working in these complexes have secondary school studies. So profound changes have occurred in this sector of the economy, including in the people working in animal production. Such changes should be investigated more profoundly in order to uncover the consequences resulting from them on various levels, and I think this belongs primarily to the sociologists.

Ion Moldovan: That really is how it is and in our zootechnics big changes took place years ago and there was much emphasis on the nature of industrial production in this sector. We built big animal-raising complexes and for some complexes we used designs from other countries and I must say that our specialists worked intensely to adapt these designs to the materials and conditions specific to Romania's climate and soil. However, with regard to our own scientific research for systematically promoting new technologies at the national scale and at the scale of the county microclimate for all breeds of animals, we cannot state we are satisfied with what has been done until now. From now on the problems linked with energy must be given priority attention by

research, in the sense of seeking and applying technological and construction solutions with the lowest possible energy consumption. An overall requirement is to strengthen a lot the technological engineering departments because the research institutes and stations must supply production not with the solutions themselves but designs of technological engineering, designs which can be carried out as efficiently as possible.

Florentin Cirpan: The development of zootechnical production as a whole and, in particular, in the industrial complexes, requires great efforts from research with a view to solving certain basic problems such as improvement of the animals' production potential, improvement in the conversion indicator for fodder, productive early weight gain, improvement in raising technologies and techniques for fodder production, construction solutions, more efficient health protection for the animals and so forth. Similar to the scientific research in other areas which is being carried out in the big industrial units, zootechnical research also should be organized in its applicational aspect in animal production complexes and combines. In this regard we have proposed that, within our combine, for example, our own scientific research center should operate (optimized production and quality control of the combined fodder; improvement in boar; production of the double industrial animal hybrid and genetics of the populations; improvement in meat quality; pilot station for production of propionic acid; computer station for keeping records and for optimization of improvement work with boar and transport; experimental technological sector). The scientific research center integrated into the specialized institute must give concrete answers to all the problems raised by the production of 100,000 tons of pork annually in this combine, in accordance with the specific nature of our current activity and together with working out of technological engineering solutions for the future, with the goal of ensuring the highest possible economic efficiency and complete competitiveness of the products at the world level.

Dumitru Teaci: Research just for the sake of research is not being done anywhere in Romania or in zootechnics, but research in order to be able to answer the requirements of production. We know very much from the viewpoint of production, that is, there is no crisis of science in zootechnics but this is not enough. It is necessary for these known elements to be assembled into an operational system and be placed at the disposal of production in a form in which it can be taken and utilized as easily as possible.

Ion Moldovan: The measures established recently by the party and state leadership on better organization of research activity in this important sector of agriculture are of the greatest importance for substantially increasing the contribution of scientific research to fulfilling the tasks provided in the programs for development of zootechnical production in Romania. Thus, they provide for the creation of a united framework for following up on and applying the programs for development of animal raising along the line of research and production, through appropriate organization of activity in the ministry as well as of the research network in the area of zootechnics, animal nutrition and veterinary medicine. Together with better organization of the leadership of production and work in the animal raising sector, a direct integration of research into the process of big zootechnical production is being sought.

Extending the network of the research units for more complete inclusion of all breeds of animals and domestic poultry with economic importance, also taking into account the specific conditions for raising them in various zones of the country, will allow

corresponding development of basic and applicational research, shortening the time for generalizing the results of research in big production. Subordination of the entire network of units to the concerned institutes where the testing of reproducers is carried out as well as production of genetic material and of the units where research is done to find new construction solutions and improve fodder technologies and solutions for raising animals as well as prevention and combatting of diseases will permit unified coordination by each institute of the research in its own area, assuming specific responsibilities in the process of zootechnical production.

These measures are in full agreement with the concept of the revolutionization of agriculture, with the great task facing us--that of increasing the share of zootechnical production to 50 percent of the value of total agricultural production in Romania.

Editor: It seems we have reached the end of this discussion. One can feel that an entire series of basic problems in the development of zootechnical production in Romania has been raised and discussed, an area which, in accordance with the Directives of the 12th party congress and the tasks established for the current five-year plan, are to record high growth rates in overall agricultural production.

Of course, much more could have been discussed because we hardly touched some of the important aspects. Precisely for that reason we feel that it would be good to leave the discussion open.

As has been seen from the discussion, we have all the conditions so that the tasks drawn by the 12th party congress and the indications of Comrade Nicolae Ceausescu in the area of zootechnics are fully achievable. However, perseverent work must be done in this direction.

Thank you for your participation; I also wish to thank the Academy of Agricultural and Silvicultural Sciences for the help it gave in organizing this discussion.

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